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FAKULTA PODNIKATELSKÁ  
ÚSTAV EKONOMIKY

FACULTY OF BUSINESS AND MANAGEMENT  
INSTITUTE OF ECONOMICS

# OPTIMIZATION AND EFFICIENCY IMPROVEMENT OF INTERNAL HR PROCESSES IN IT/TELCO COMPANY.

OPTIMALIZACE A ZEFEKTIVNĚNÍ PERSONÁLNÍCH PROCESŮ VE SPOLEČNOSTI IT/TELCO

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AUTOR PRÁCE  
AUTHOR

Bc. JANA TUČKOVÁ

VEDOUCÍ PRÁCE  
SUPERVISOR

Ing. ZDEŇKA KONEČNÁ, Ph.D.

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# **ZADÁNÍ DIPLOMOVÉ PRÁCE**

**Tučková Jana, Bc.**

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BARON, A, ARMSTRONG, M. Human capital management: Achieving added value through people. London: Kogan Page, 2007. 226 s. ISBN 0-7494-4938-1.

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L.S.

---

Ing. Martin Slezák  
Ředitel ústavu

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doc. RNDr. Anna Putnová, Ph.D., MBA  
Děkan fakulty

V Brně, dne 25.08.2009

## **Abstract**

This diploma thesis is focused on a section of human resource management especially on optimization and efficiency improvement of internal human resource processes in IT/Telco Company using Human Resource Scorecard ratio set. The theoretical part clarifies the terms such as balanced scorecard, human resource scorecard and benchmarking. Then the individual metrics and their formulas are described.

The practical part states ratio calculations for the quarters of years 2008 and 2009, their evaluation, development and internal benchmarking and suggests solution to process improvement in given area.

Key words: Balanced Scorecard, Human Resource Scorecard, Benchmarking

## **Abstrakt**

Tato práce je zaměřena na oblast lidských zdrojů, konkrétně na optimalizaci a zefektivnění interních personálních procesů ve společnosti IT/Telco, a to pomocí souboru ukazatelů Human Resource Scorecard. Teoretická část definuje termíny, jakými jsou například balanced scorecard, human resource scorecard a benchmarking. Dále popisuje jednotlivé ukazatele a jejich vzorce.

Praktická část uvádí výpočty ukazatelů za čtvrtletí let 2008 a 2009, jejich zhodnocení, vývoj a interní benchmarking a navrhuje řešení na zlepšení procesů v dané oblasti.

Klíčová slova: Balanced Scorecard, Human Resource Scorecard, Benchmarking

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## **Statutory declaration**

I declare that this diploma thesis was written independently and I quoted all literature and other corresponding sources in the references.

In Brno, August 31, 2009

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signature

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# Content

<b>I. INTRODUCTION.....</b>	<b>10</b>
<b>II. THEORETICAL PART .....</b>	<b>12</b>
1. BALANCED SCORECARD .....	12
1.1 Balanced Scorecard History and Approach.....	13
1.2 Perspectives of Balanced Scorecard .....	14
1.2.1 Financial perspective.....	14
1.2.2 Customer's perspective .....	15
1.2.3 Internal and business perspective.....	15
1.2.4 Learning and growth perspective .....	15
1.3 Balanced Scorecard and Strategic Alignment .....	16
1.3.1 Translating the vision.....	17
1.3.2 Communicating and linking .....	17
1.3.3 Business planning .....	17
1.3.4 Feedback and learning .....	17
2. HUMAN RESOURCE SCORECARD .....	18
3. HUMAN RESOURCE METRICS.....	19
3.1 Innovation and Creativity .....	22
3.2 Employee Attitudes .....	22
3.2.1 Job satisfaction.....	22
3.2.2 Employee engagement .....	23
3.2.3 Organizational commitment.....	23
3.3 Workforce Stability .....	24
3.3.1 Turnover.....	24
3.3.2 Tenure and longevity .....	25
3.4 Employee Capability .....	26
3.4.1 Experience.....	26
3.4.2 Learning .....	26
3.4.3 Knowledge .....	27
3.4.4 Competencies and level of education.....	27
3.5 Leadership .....	28
3.6 Productivity .....	29
3.7 Recruitment .....	29
3.7.1 Cost per hire.....	29

3.7.2 Quality of new hires .....	30
3.7.3 Recruiting sources .....	30
3.7.4 Recruitment efficiency .....	31
3.8 Compensation and Benefits .....	32
3.9 Employee Relations .....	33
3.9.1 Absenteeism .....	33
4. CRITERIA FOR EFFECTIVE MEASUREMENT .....	34
5. BENEFITS OF HUMAN RESOURCE SCORECARD .....	35
6. BUILDING HUMAN RESOURCE SCORECARD .....	37
6.1 Scorecard Options .....	38
6.1.1 Workforce Measurement Scorecard .....	38
6.1.2 IPO Scorecard .....	38
6.1.3 The Balanced scorecard process .....	39
6.1.4 The Causal chain scorecard .....	39
6.1.5 Human resource process scorecard .....	41
6.1.6 Transactional benchmarking .....	41
7. BENCHMARKING .....	42
7.1 What is Benchmarking .....	42
7.2 Types of Benchmarking .....	42
7.2.1 Internal benchmarking .....	43
7.2.2 Competitive benchmarking .....	43
7.2.3 Functional benchmarking .....	43
7.3 Why Benchmark .....	44
<b>III. PRACTICAL PART .....</b>	<b>46</b>
8. IT/TELCO COMPANY .....	47
8.1 Company Vision, Mission, Values .....	48
8.2 Products Portfolio .....	48
9. HUMAN RESOURCE METRICS .....	50
9.1 Turnover .....	54
9.2 Workforce Profile .....	55
9.2.1 Headcount and FTE .....	55
9.2.2 Educational diversity .....	56
9.2.3 Age and gender diversity .....	57
9.3 Recruitment .....	60
9.3.1 Hiring volume .....	60



9.3.2 Hiring sources .....	61
9.3.3 Cost per hire .....	63
9.3.4 Time to fill the position.....	65
9.4 Absenteeism .....	66
10. RECOMMENDATIONS .....	67
10.1 Summary and Evaluation of Monitored Metrics .....	67
10.1.1 Turnover.....	67
10.1.2 Workforce profile.....	68
10.1.3 Recruitment.....	69
10.1.4 Absenteeism.....	70
10.2 Metrics in Training Category .....	71
10.2.1 Costs per employee .....	71
10.2.2 Measuring benefits .....	72
10.2.3 Return on investment (ROI) for training.....	72
10.2.4 Training costs calculation example .....	73
10.2.5 Training days per employee .....	75
11. CONCLUSION .....	76
12. REVIEW OF LITERATURE .....	78
13. LIST OF FIGURES .....	81
14. LIST OF TABLES.....	81
15. LIST OF CHARTS .....	81

# **I. Introduction**

Human resource managers and specialists have long claim that the human resource function plays very important role in company performance. In reality, majority of corporate annual reports states the company's human capital is its most important intangible asset. The other intangible assets involve customer relations, copyright, company image and so on. All these but mainly the know-how, creativity and flexibility of employees are as critical to business success as tangible assets. The importance of human assets explain why it is important to monitor and measure their value as a means of evaluating how well they are used and of indicating what else needs to be done to manage them more effectively.

Many questions about measuring human resources arose – What to measure? How to measure it or where? These questions made measurement of human resources difficult.

For human resources to be acclaimed as a strategic leader, the myth that it is not measurable must have been broken. Human resources should be evaluated by considering the results and the value it brings, thus human resources must prove itself quantitatively, clearly and directly.

Various model can be used to analyse human capital information to produce meaningful information for the company both internally and externally.

One method how to reach this is via the Human Resource Scorecard which uses leading and lagging measures connected to the general business strategy. With help of this tool and measures, metrics are developed to monitor performance, analyze the data, calculate financial implications, track continuous improvement strategies and trends and recommend positive and financially acceptable solutions. This system of measurement is effective because it links company employees with business strategy and whole performance.

The intention of this diploma thesis is theoretical summation of some generally familiar findings, regarding human resource measurements, and their follow up application in practical part; the familiarization with the human resource measurement problems as an auxiliary tool that facilitates the decision making in specific personnel questions. The

tool that is appropriate not only to know but also to apply in the conditions of any company.

The diploma thesis is divided into several chapters. The introductory chapter sticks at the summary of information from the area of Balanced Scorecard, its perspectives and strategic alingment. The following chapters describe terms such as human resource scorecard and the most used human resouce metrics, as well as the criteria for effective measurement. At the end of theoretical part, the benchmarking – method of measuring and comparing organization against competitors – is described.

The cardinal section of this thesis is focused on the calculation of monitored human resource metrics in IT/Telco Company (such as turnover, cost per hire, hiring sources or absenteeism) for periods 2008 and 2009, their evaluation and internal benchmarking of gained results with the corporate target values.

The aim of the diploma thesis is, on the basis of theoretical findings and results gained through calculation, to suggest possible recommendations for optimization and efficiency improvement of internal human resource processes in IT/Telco Company.

## **II. Theoretical part**

### **1. Balanced Scorecard**

Conflict between the need of company to be competitive in the long term and rigid model of financial accounting, gave rise to a new method – Balanced Scorecard. This framework maintains traditional financial measures which, however, show last financial transactions as well. The financial measures are still inconvenient for setting the strategy that today's organizations have to choose to create value through investments into customers, suppliers, employees, processes, technologies and innovations. Therefore, Balanced Scorecard supplements financial measures of last performance with new measures of driving forces of future performance (8).

Balanced Scorecard (BSC) is the system that enables the organizations to implement their strategy with success. This system provides appropriate linkages which enable organizations to implement complex and complicated activities connected with corporate strategies implementation and monitor all company activities, in order to achieve the strategic goals. According to Punniyamoorthy (2008, p. 5) the definition of BSC is:

*“The Balanced Scorecard is a strategic performance management system that links performance to strategy using a multi dimensional set of financial and non-financial performance measures. It focuses on better understanding the causal relationships and links within organizations and the levers that can be pulled to improve corporate governance.”*

Thus, the Balanced Scorecard basically is a means of focusing employee's attention on desired behaviour and results. By combining financial and non-financial measures in the same report the BSC aims to provide the managers with more significant information about activities they are controlling than is provided by financial measures only.

## 1.1 Balanced Scorecard History and Approach

The Canadians and French companies were the first who used the Balanced Scorecard but in different forms. The French began to use a measure, which covered both financial and non-financial measures. The emphasis on the level of quality in America during 1980s made Canadian organizations to include non-financial measures in developing their business strategy. This was the initial approach of the BSC (12).

In 1992 Kaplan and Norton had designed the BSC in its current form. They had framed the BSC as a set of indicators that take into consideration an integrated view of the business processes so as to measure the company's performance. *"The system was initially established to supplement traditional financial measures with criteria that measured performance from three additional perspectives – those of customers, internal business processes and learning and growth"* (8, p. 19). These four perspectives then compose BSC framework.

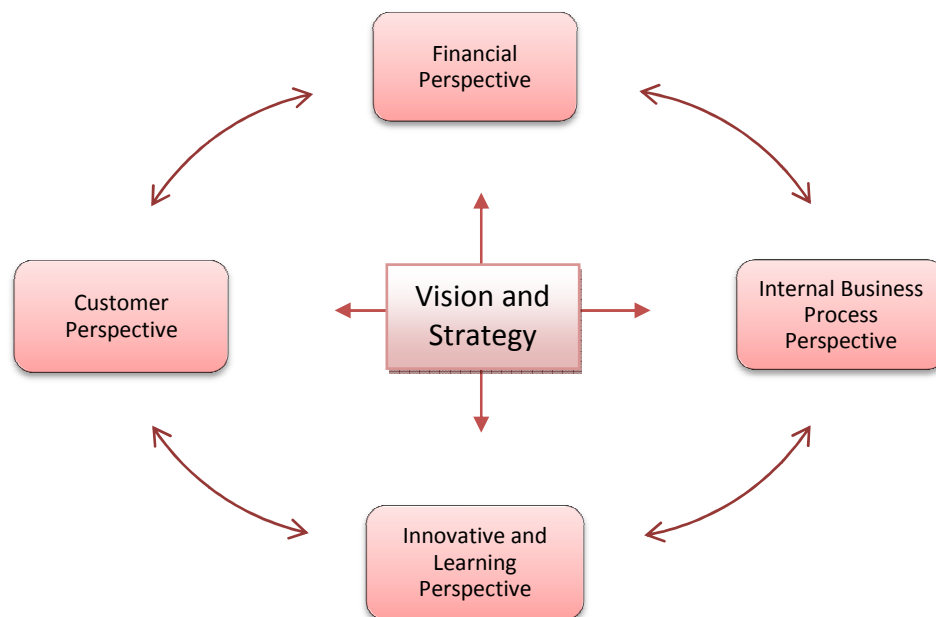


Figure 1: Balanced Scorecard Framework (Chavan, 2009, p. 4)

The Balanced Scorecard developed into a strategic management system that forms a bridge between the long- and short- term strategies of a company. Many organizations promptly adopted this method because it provided a single document in which the linkages of activities (by giving appropriated importance to both tangible and non-

tangible factors) were more clearly showed than in any other process adopted. The BSC, as it is today, can be used by many companies of any size, industry, type of business across the world, to link the vision and mission with all the functional requirements and everyday work. It can also allow them to manage and evaluate business strategy, monitor operational efficiency, provide improvements, build organization capacity, and communicate progress to all employees.

The approach of Balanced Scorecard provides a comprehensible prescription to what organizations should measure in order to balance the impacts in all the functional areas, arising out of the strategic intent (8).

## 1.2 Perspectives of Balanced Scorecard<sup>1</sup>

The strategic content of the organization can be divided into different perspectives, which cover all the activities of the company. Kaplan and Norton, as mentioned above, introduced four perspectives through which activities can be incorporated (12, 15).

These perspectives are worded as follows:

- Financial perspective
- Customer's perspective
- Internal and business perspective
- Learning and growth perspective

### **1.2.1 Financial perspective**

Financial perspective evaluates the profitability component of the strategy and focuses on traditional return-based efficiency and effectiveness metrics (How does the company look to stakeholders?). Metrics in this area include accounting-based measures of profitability and surplus generation such as Cash Flow, Return on Investment; Return on Equity, Economic Value Added, Profitability, Growth, Sales Revenue, ROCE, Share Price,

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<sup>1</sup> Chapter 1.2 was processed according to:

KAPLAN, Robert S.; NORTON, David P. Balanced Scorecard: Strategický systém měření výkonnosti podniku. 4.vyd., Praha: Management Press, 2005. 267 s. ISBN 80-7261-124-0.

### **1.2.2 Customer's perspective**

This perspective evaluates how customers perceive the company and it is focused on the analysis of different types of customers, their degree of satisfaction and the processes used to deliver product and services to them. It identifies the targeted market, segments and measures the company's success in these segments. Particular areas of focus are e.g. market share, brand image and student, alumni and employer satisfaction, customer retention and loyalty, new markets, new products.

### **1.2.3 Internal and business perspective**

Internal and business perspective is focused on internal operations (What must we excel at?). The issues in this area involve the internal business processes necessary to develop a successful strategy. Indicators such as Supply-chain processes, research quality, and teaching quality are measured in this area.

### **1.2.4 Learning and growth perspective**

This perspective defines the capabilities in which the company must be special in order to achieve superior internal process that will create value for customers and share holders (How can we continue to improve and create value?). Metrics in this area address the company's ability to innovate and develop new capabilities through research, new product growth and development and improved funding opportunities.

The four perspectives are complete in so far as no supplementary perspective is required to represent any component of organizational activity that management may believe worth the focus. Each perspective influences and is influenced by the other perspectives as is shown in Figure 1 (p. 13).

### 1.3 Balanced Scorecard and Strategic Alignment<sup>2</sup>

The strength of the BSC attitude is its completeness of the range of strategy concepts and the way of linking them together in a single net as shown in Figure 2.

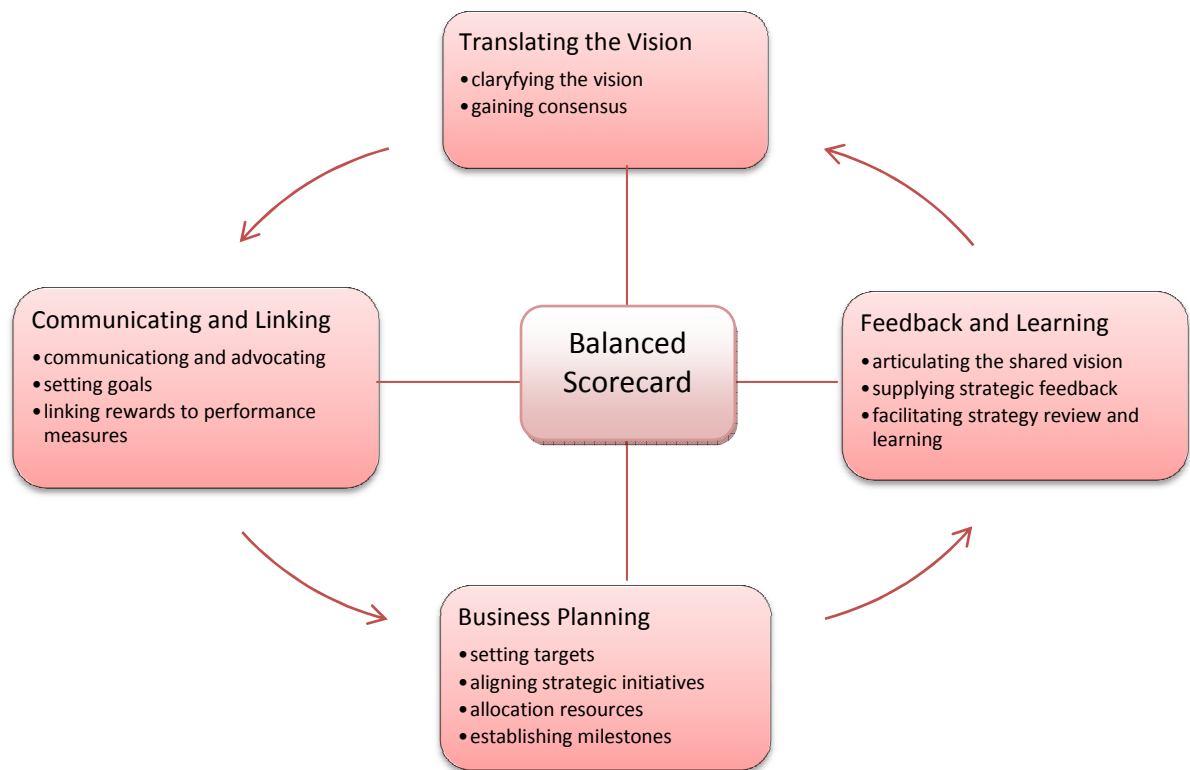


Figure 2: Strategic Alignment of Balanced Scorecard (Kaplan, 2005, p. 23)

The former version of the BSC, as Kaplan and Norton note, as a balanced multi-perspective performance measurement system has transformed to take into consideration the processes and alignment of strategy with company structures and environments. It has developed to a new strategic management system linking long-term strategic goals and short-term actions. This new strategic management system includes a set of four processes that interact to allow managers of the strategic balance between short-term productivity objectives and long-term growth perspectives.

<sup>2</sup> Chapter 1.3 was processed according to:

KAPLAN, Robert S.; NORTON, David P. *Balanced Scorecard: Strategický systém měření výkonnosti podniku*. 4.vyd., Praha: Management Press, 2005. 267 s. ISBN 80-7261-124-0.



### **1.3.1 Translating the vision**

BSC process begins with top management teamwork and translation of the vision and strategy statements into clear and well-understood set of objectives and measures that are agreed and supported by all managers. The development of BSC not only exposes the lack of consensus and teamwork but also it contributes to the solution of this problem.

### **1.3.2 Communicating and linking**

Strategic objectives and BSC measures are communicated in the whole company by means of bulletins, company newspapers, or network. If strategy is to be successful, such news has to inform employees about key objectives that must be reached. As soon as employees understand the corporate vision, they can determine departmental and individual objectives supporting global strategy. Therefore, BSC provides a vehicle for debate and undertakes a strategic role in ensuring that the organizational strategy is understood by all organizational levels and that both departmental and individual objectives are linked and closely aligned to the strategy.

### **1.3.3 Business planning**

The third process provides a basis for the integration of programme and financial plans. The managers should set objectives for BSC measures for 3-5 years that enables, if they are reached, transformation of the company. These objectives should present discontinuity in the company performance. The fact that business unit scorecards are designed to link with the corporate scorecard can be proved by means of benchmarking.

### **1.3.4 Feedback and learning**

This process is the most important and the most innovative aspect of whole BSC. It enables the organizational learning at the level of executive. The managers in today's companies do not have feedback to verify the correctness of their strategy and test hypothesis on which the strategy is based. BSC allows them to monitor or adjust established strategies or, alternatively, change them (8, 15).

The Balanced Scorecard framework has received significant attention because it involves measures that describe the actual value-creation process rather than focusing on just the financial results. The weakest feature of this approach is, according to Kaplan and Norton (2005), the question of how best to integrate human resource's role into a company's measurement of business performance.

Human Resource function has serious implication on general business performance. In fact, company's competitive advantage, for the most part, depends on the way it manages its largest asset – its employees; and the efficiency level of the company depends on its Human Capital Management (HCM). When taking to account human capital it is necessary to determine the specific measures to monitor. The set of these measures is called Human Resource Scorecard and represents an important lever that company can use to design and deploy a more effective human resource strategy.

## **2. Human Resource Scorecard**

The arrival of the Balanced Scorecard model has opened a new way to organizing and monitoring human capital information. Companies can take the concept behind the Balanced Scorecard and create human capital version which is focused on recent and current events.

Human Resource Scorecard is modelled after the Balanced Scorecard developed by Kaplan and Norton (1992) and is set to revolutionise the way business perceives human resources. It is a measurement as well as an evaluation system for redefining the role of HR as a strategic partner. The HR Scorecard is a lever that allows managers to make HR a strategic asset. This tool not only facilitates measuring HR's implication on company performance, but also helps HR professionals have new insights into what steps should be taken to maintain HR as a strategic asset. Human resource scorecard demands change and flexibility as well as constant monitoring and re-thinking. It is not one-time event process, thus professionals have to regularly review the measures and their implications. Implementing effective measurement systems for intangible assets is a difficult issue and requires the existence of an integrated framework to guide the HR managers. Measurement is infamously difficult because the things that human capital is likely to influence are at the mercy of many other contextual factors. One of the reasons why

measurement is difficult is that human resources are not owned by the company but secured via the employment relationship. Several things that could give us a sign of the people contribution are out of the control of the business. Employees can decide how much effort above the minimum required to retain their job they put into their work. To ensure the extra effort from employees, companies must identify the triggers that will encourage this effort. Human capital thus represents the fit between the demand for and supply of human abilities.

There are several metrics that are commonly used (2, 5, 8).

### **3. Human Resource Metrics**

Human Resource Metrics very often receive little or no importance in many companies. However, they contribute to significant business decisions and provide measurable results, there is a possibility to use these metrics to support strategic and operational decision making. HR specialists can prove their value by providing focused metrics on the HR issues that drive change and success in their company. Metrics and benchmarking facilitate to strengthen the role of HR specialist as a strategic partner.

Measuring the HR function has a lot of advantages. Metrics can be used to assist with the allocation of resources, staffing, compensation and benefit programs, strategic decision making, talent management, etc. Moreover, a subgroup of key HR metrics used in a scorecard can put managers's minds in to important issues and effectively drive change. To be effective, metrics should not only present results, but also need to be the first measure in making the case for how strategies, practices and programs impact business performance (11).

According to Phillips (2005), the most common set of HR metrics monitored by companies is presented in following table (11).

Measure category	Metric
Innovation and Creativity	Innovation Creativity
Employee attitude	Employee satisfaction Employee engagement Organizational commitment
Workforce stability	Turnover and Termination Tenure and Longevity
Employee capability	Experience Learning Knowledge Competencies Level of education
Human capital investment	HR department investment Total human capital investment Investment by category
Leadership	360° feedback Leadership inventories and Perception
Productivity	Unit productivity Gross productivity
Workforce profile	Demographics
Recruitment	Job growth Recruitment sourcing and Effectiveness Recruiting efficiency
Compensation and Benefits	Compensation Employee benefits Variable compensation Employee ownership
Compliance and Safety	Complaints and Grievances Charges and Litigation Health and Safety
Employee Relations	Absenteeism and Tardiness Work/life balance

*Table 1: Human Resource Metrics (Phillips, 2005, p. 178)*

Another example provides the community of professionals at HR metrics center. There are over forty HR metrics to be created and benchmark divided into 6 categories:

- Recruiting
- Compensation and Benefits Productivity
- Training and Development
- Talent management
- HR management (17)

To present individual measure categories and metrics, I employed the above mentioned division by Jack Phillips (11).

#### Full-Time Job Equivalent (FTE)

In today's working environment, companies employ people in several ways. Beside the traditional full-time employment, many people work part-time. This changes the corporate denominator from "head" to full-time equivalent.

Full-time equivalent is the reference value used in human resource management. It is the number of effective full-time equivalent employees for a time period and is similar to headcount (the number of employees), except that part-time and casual employees are converted to full-time equivalents. The definition and formula is then: *"The total number of hours worked divided by the number of commensurable hours in a fiscal year"* (5, p. 31, 17).

$$FTE = \frac{\text{Total number of hours worked in period}}{\text{Number of commensurable hours over for period}}$$

To calculate this ratio it is necessary to know the standard number of working hours per employee. In spite of the fact that total hours worked are the best measure of employee inputs, there is other advantages of FTE. It can be estimated more easily and so facilitate international comparisons with countries which can only estimate full-time equivalent employment (11).

### 3.1 Innovation and Creativity

For many companies to measure innovation is a crucial issue. Innovation can be defined as *“the ability to define and create new products and services and quickly bring them to market”* and is important source of competitive advantage (11, p.178). To measure innovation is both easy and difficult. It is simple to measure outcomes in such ranges as new products, processes, improved product and processes, patents or inventions, because many companies track and document these items to reflect the innovative profile of the company. On the other side, the gained data are difficult to compare with foregoing information or benchmark with other organizations because these metrics are generally unique to the organization.

Creativity relates to the creative experience, actions and input of company, thus it can be more difficult to measure the employee creativeness. In some companies, the announcement about employee creativity can be mentioned in a regular employee feedback while other organizations use the inventories and instruments distributed at meetings or trainings sessions.

To have a consistent and comparable system of measuring innovation and creativity is, however, still the challenge (11).

### 3.2 Employee Attitudes<sup>3</sup>

In this category companies monitor three metrics. These are job satisfaction, employee engagement and organizational commitment.

#### **3.2.1 Job satisfaction**

Employee satisfaction has traditionally been considered to be the key in determining organizational job accomplishment and the important topic for managers. It is frequently measured by organizations because satisfied employees tend to be more productive, creative and loyal to their employers.

The term job satisfaction means a pleasurable emotional state resulting from the appraisal of one's job or an attitude towards one's job. The positive and favourable attitude to

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<sup>3</sup> The chapter 3.2 was processed according to:

PHILLIPS, Jack J. Investing in your company's human capital: Strategies to avoid spending too little--or too much. New York: Amacom, 2005. 288 s. ISBN 0-8144-0853-2.

work signals the satisfaction in work. Negative and unfavourable attitude to work then signals discontent. To measure employee satisfaction with employer, policies, environment, leadership, empowerment and other factors, organizations use a feedback survey.

### **3.2.2 Employee engagement**

Employee engagement is fundamental to an organization's success. Engaged employees are loyal, motivated team players who care about the company and work hard to help the organization succeed. Employees who are engaged generally perform well, and are less likely leave the company. Disengaged employees, on the other side, are negative forces that can hurt morale and obstruct progress. Since an engaged workforce is so important to a company's long-term achievement, it is essential that every business measure and understand their staff's level of engagement. The first step to measuring employee engagement is to issue an employee engagement survey.

### **3.2.3 Organizational commitment**

Organizational commitment, in general, is the employee's psychological attachment to the organization. It goes beyond employee satisfaction and reflects the extent the employees identify with organizational objectives, mission, values, philosophy, policies and practices. It is often measured just as the job satisfaction using attitude surveys and five to seven point scale. The survey is directly taken from the employees.

### 3.3 Workforce Stability<sup>4</sup>

#### 3.3.1 Turnover

Turnover is a ratio defined as: “*The number of employees a company must replace in a given time period divide by the average number of employees in the time period*” (10, p. 185).

$$\text{Total Turnover} = \frac{\text{Total number of employees leaving organization in time period (year)}}{\text{Average number of employees in time period}} \times 100$$

Reaching the turnover of zero percent is neither realistic nor desirable. Employees leave company for several unpreventable reasons such as financial reasons, partner relocation, to retire, to return to school, etc. There may be nothing company can do about it.

Zero turnover is not desirable because if all employees stay while company is growing steadily, most employees will reach the top of their pay ranges and salary expenses would be extremely high. The second reason is that new employees can bring new ideas, abilities, attitudes and can keep company from become stagnant. Thereupon some amount of turnover is generally considered healthy.

On the other side higher turnover may be a sign of issues like the poor hiring practices, salaries that are not competitive or lack of career growth within the company. From this reason this number should be compared with similar organizations to determine what is typical for them.

Turnover can be divided into desirable (involuntary) and undesirable (voluntary).

$$\text{Desirable Turnover} = \frac{\text{Involuntary terminations in time period}}{\text{Average number of employees in time period}} \times 100$$

Desirable turnover is the percentage of employees, who had to leave organization involuntarily during the time period. It is a management decision based on strategy, a

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<sup>4</sup> The chapter 3.3 was processed according to:

PHILLIPS, Jack J. Investing in your company's human capital: Strategies to avoid spending too little--or too much. New York: Amacom, 2005. 288 s. ISBN 0-8144-0853-2.

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<http://www.hrmetricscenter.com/>.

STOVEL, Meaghan; BONTIS, Nick. Voluntary turnover: knowledge management – friend or foe? Journal of Intellectual Capital [online]. 2002, č. 3 [cit. 2009-06-25]. Dostupný na WWW:

<http://www.emeraldinsight.com/Insight/ViewContentServlet?contentType=Article&Filename=Published/EmeraldFullTextArticle/Articles/2500030307.html>.



result of poor employee performance, or perhaps decision forced upon the individual by society (e.g. mandatory retirement) or by circumstance (e.g. health reasons).

$$\text{Undesirable Turnover} = \frac{\text{Voluntary terminations in time period}}{\text{Average number of employees in time period}} \times 100$$

Undesirable turnover is the percentage of employees who left the organization voluntarily during the time period. Higher turnover may be an indication of an employee retention issue.

### **3.3.2 Tenure and longevity**

Along with turnover, the focus is on the tenure and longevity as well. Tenure is “*the length of service of all employees in the company*” (11, p. 186). The average length of service is often crucial as several companies aspire after stability and loyalty in a workforce. To measure average tenure, following formula can be used:

$$\text{Average Tenure} = \frac{\text{Total number of years of service of all employees}}{\text{Total FTE at the end of calendar year}}$$

High tenure may indicate low turnover and strong employee retention. Conversely, the low tenure could be the implication of instability, high turnover and can be very destructive for the business.

Similar formula can be used for expression of average tenure of management which indicates the longevity of service of company’s management:

$$\text{Average Tenure of Management} = \frac{\text{Total number of years of service of all managers}}{\text{Number of managers at the end of the calendar year}}$$

The height of the results can be interpreted as with average tenure of all employees.

### 3.4 Employee Capability

In the category of employee capability we can measure experience, learning, knowledge, competencies and the level of education.

#### 3.4.1 Experience

Experience is an indicator important especially in companies where the service are complex, technology critical and the job requires large amount of expertise. It can be monitored with the use of experience levels within functions or by job category (e.g. average years of service for position). The advantages of experienced worker are that they can develop new approaches, processes or technologies based on their experience, but from the other hand they cost the company more in terms of salaries and bonuses (11).

#### 3.4.2 Learning

Companies measure learning by the investment in learning or training programs – by the number of hours involved in training or the number of programs offered.

$$\text{Hours of Training per Employee} = \frac{\text{Total training hours for all employees}}{\text{Average number of employees}}$$

The metric of the money invested during the year for employee training is measured as:

$$\text{Training Costs per Employee} = \frac{TC+TF+TS+TT+IS+MT}{\text{Average number of employees}}$$

Legend:

TC – Total expenses for external training consultants

TF – Training facility expenses

TS – Training supplies expenses

TT – training related travel expenses

IS – Internal trainers's salaries

MT – Miscellaneous training expenses

Although the numbers are important as a reflection of the commitment to learning, they do not present results, thus other measures are necessary. These are easily measured for individual programs but often difficult at the macro level. The results of learning program, when take into consideration the individual programs, can be measured by testing, simulation or performance demonstration, sometimes self or team assessment is used (11, 17, 19).

### **3.4.3 Knowledge**

Another critical issue in the human capital area is knowledge. Metrics that are monitored to reflect the value and intensity of knowledge in company are for example:

The actual level of knowledge intensity that is calculated as a percent of revenues spent on research and development or the percentage of knowledge employees compared to other employees in company. The measurement of knowledge overlaps with measurement of other metrics such as learning, experience or innovation.

Another way how to measure knowledge is with use of Value added per monetary unit of employee costs. *“The calculation is based on totaling all of the revenues and subtracting nonemployee inputs, which is all purchased expenses, excluding expenses for payroll and benefits. The measure is then divided by the payroll and benefits costs.”*

The metric reflects how much of the added value has been created by one monetary unit invested in employees (11, p. 188).

### **3.4.4 Competencies and level of education**

Companies generally develop key competencies in particular job areas (e.g. mission, key product lines, processes). *“A competency is a clearly stated definition of performance area related to success in a job or role”* (11, p. 190). These definitions can be described as a:

- direct statements definition – a single sentence or brief descriptor that expresses the meaning of the competency
- key elements definitions – a paragraph or descriptor in combination with additional descriptors, that further detail the significant aspects of successful performance in the competency

The competencies are frequently measured with self assessment or supervisor assessment using three basic forms (11):

- Likert scales – the most familiar kind of rating scales that consists of a numeric scale with a brief description of each number's corresponding meaning. The scales range from low to high, bad to good, less to more, etc.
- Behaviorally anchored rating scales – the reviewer evaluates a competencies by choosing from several descriptions of on-the job performance one that best describes the individual's abilities.
- Threshold scales – the kind of scales involving rating and individual on whether he or she meets a minimum performance level in a competency using the “yes” and “no” points.

The level of education, as an important measure, usually refers to the number of years of formal college and university education. High level of education is not always desired in some areas. If the level is overly high there can be the turnover growth because of the over qualification and employees may leave when another job opportunity occurs (10, 11).

### 3.5 Leadership

Perhaps the most difficult area to measure is, according to Phillips (2005, p. 192), leadership. In the corporate world a company's success could be dependent on how effective the leaders are. Measuring this category can be achieved in several ways but the most general way is the 360° feedback. It is an observation of behavior captured in survey assessed by different sources to provide overall leadership capability (e.g. manager of a leader, colleague, customers, and self assessment).

The second way of leadership measurement is the leadership inventories. The managers are required to participate in several inventories assessing determined competency statements. This method then reflects the extent to which a current leadership style is in place.

The leadership perception is another method of measurement. It monitors a quality, success and suitability of leadership from the perception of employees. The metric is generally taken in addition to annual feedback survey (2).

### 3.6 Productivity

Productivity is a metric measured per worker or per worker-hour (e.g. average production per employee). The common method for measuring gross productivity is Revenue per employee.

$$\text{Revenue per Employee} = \frac{\text{Company gross revenue}}{\text{Average number of employees}}$$

The ratio is most useful when compared against other organizations in the same field of business. The higher revenue per employee, the better, as it indicates higher productivity. Next possibilities would be income per employee, earnings per employee or net profit per employee (11, 17).

### 3.7 Recruitment<sup>5</sup>

Measuring success is critical in recruiting. There are four general types of metrics on which to concentrate: cost, quality, quantity and time.

#### 3.7.1 Cost per hire

Cost per Hire is a common recruiting effectiveness measuring tool and it represents the costs involved with a new hire. Although this calculation is a valuable tool it does not take into consideration the time it takes to fill the job and quality of the hire. In addition this metric differs from position to position. It is important to note that different organizations have different ways of calculating Cost per Hire, thus, comparing company's results against other organizations should be taken less than fully unless company is certain that measurement is being done in the same way among the firms being compared.

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<sup>5</sup> The chapter 3.7 was processed according to:

PHILLIPS, Jack J. Investing in your company's human capital: Strategies to avoid spending too little--or too much. New York: Amacom, 2005. 288 s. ISBN 0-8144-0853-2.

HR Metrics Center [online], 2009 [cit. 2009-06-24]. Dostupný na WWW:  
<http://www.hrmetricscenter.com/>.

HR.com [online], 2009 [cit. 2009-06-23]. Dostupný na WWW:

<http://www.hr.com/SITEFORUM?i=1116423256281&b=1116423256281&t=/Default/gateway&xref>

One of the methods for measuring Cost per Hire was developed by the Employment Management Association (EMA), a special interest group of the Society for Human Resource Management in conjunction with the Saratoga Institute and the formula is following (17):

$$\text{Cost per hire} = \frac{AD+AF+RB+TC+RE+RC+NC}{\text{Total Hires}}$$

Legend:

AD – Recruitment advertising fees

AF – Agency placement fees

RB – Referral bonus (cost of employee referral program)

TC – Recruiting related travel costs

RE – Relocation costs

RC – Internal recruiter salary

NC – Unsolicited no-cost resumes

Even though it may be time consuming, developing good numbers to accurately assess cost-per-hire should benefit any HR department. Good metrics will help reduce costs and improve the recruitment process, because, if company has a good benchmark, people will aim for it.

### **3.7.2 Quality of new hires**

The quality of a new candidate recommended by specific source is usually a subjective metric taken directly from the candidate's manager who rates how well the new hire met the position requirements. The performance assessment may be formal or informal. As the quality of a new hire is not a specific number, it cannot be calculated using formula as would be with other metrics. The skills and experience become the basis for the quality measure. Generally, to point out quality issues, it takes from thirty to sixty days after employment.

### **3.7.3 Recruiting sources**

Recruitment sourcing is the important indicator related to the quality and quantity of candidates, and ultimately to the success of employees and their stability and longevity. Monitoring these sources allows HR specialist to track candidates to the original person,

place or Web site. Some recruiting sources are more effective than others and tracking the sources and connecting them to subsequent outcomes is important. When tracking the source of candidates, reflection on effectiveness is also important. Using the hire ratio the company can measure how well the source purveys appropriate and qualified candidates.

$$\text{Hire ratio} = \frac{\text{Number of candidates flowing through a specific source}}{\text{Hired candidates}} \times 100$$

This ratio changes according to a specific source from which candidate comes from (e.g. the ratio for the personnel agency referral would be the percentage of candidates recommended by the agency divided by those being hired).

More important metric in this area is the ratio called “*churn rate*” (11,p. 199) which compare the turnover in the first year (or months) of employment by the recruiting source. This comparison reflects the stability of the recruiting source. The source that generates high termination rate may be not the acceptable source to use in the future. On the other side, the source that generates long-term stable employees becomes a preferred one.

### **3.7.4 Recruitment efficiency**

This recruitment metric is usually expressed as the time needed to fill the position (time to fill) and it measure the efficiency of the process. It begins in the moment where the request for a new employee is submitted and ends when the candidate is actually on the job and the number is calculated using calendar days, including weekends and holidays.

$$\text{Recruitment efficiency} = \frac{\text{Time to fill all open positions}}{\text{Number of job offers accepted}}$$

In companies where job growth is necessary or the turnover is high, time to recruit is an important consideration. The faster the response, the better – so long as quality is there. Therefore, the time to fill the job would have to be mitigated by the quality and stability of the candidate selected.

### 3.8 Compensation and Benefits<sup>6</sup>

Compensation is a payment to employees in return for their contribution to company – for doing their job. The most common forms of compensation are wages, salaries and tips. This ratio can be measured in different ways.

- Total compensation for all employees which consists of direct and variable wages and salaries.
- Compensation cost per employee measuring average salary cost per employee.
- Total compensation as a percent of operating expenses is calculated as:

$$\frac{\text{Annual base salary payroll} + \text{annual variable pay}}{\text{Company operating expenses}}$$

- Total compensation as a percent of revenue informs how much of revenue is going to employee salaries. The formula is:

$$\frac{\text{Annual base salary payroll} + \text{annual variable pay}}{\text{Company Gross Revenue}}$$

- Total compensation as a percent of the human capital investment indicates how much of the human capital is going into actual pay.

Employee benefits are composed of arrangements made by company for its employees that enhance their well-being. They provide for the personal needs of employees and are means of their commitment enhancement to the company and demonstrating the employers care for their satisfaction. They are provided in addition to pay (compensation) and form an important and also costly part of the total reward set. Thus, they have to be planned and managed carefully (2).

Typically they deal with personal security, financial assistance, personal needs (e.g. retirement plans, health life insurance, vacation, unemployment compensation, stock options and so on).

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<sup>6</sup> The chapter 3.8 was processed according to:

LAWLER, Edward E.; BOUDREAU, John W.; MOHRMAN, Susan A. et al. Achieving strategic excellence: an assessment of human resource organizations. Stanford, Calif. : Stanford Business Books, 2006. 143 s. ISBN 0-8047-5331-8.



The possible methods of measurement are the total employee benefit cost or benefits as a percent of actual payroll which is a typical benchmarking statistic.

The benefits as a percent of revenue is calculated as total benefit costs divided by company gross revenue. Similarly, the benefits as a percent of operating expenses are calculated as total benefit costs divided by company operating expenses.

To be sure that employee benefits are optimized, employees must know the full details of the benefit packages, particularly compared to others in the industry.

### 3.9 Employee Relations

#### 3.9.1 Absenteeism

Absenteeism is productivity metric, which reflects the percentage of lost work days due to unplanned events, such as illness or injury.

$$\text{Absenteeism} = \frac{\text{Total number of days absent for all staff}}{\text{Average number of employees} \times \text{number of work days in the year}} \times 100$$

Absenteeism is costly for the company because the work ascribed to a given job is not done by the particular person paid to do it when he or she is absent (11, 17).

## 4. Criteria for Effective Measurement<sup>7</sup>

Human capital scorecard has become the dominant method used by companies to ensure that suitable ratios are monitored and improvement occurs. When establishing the measurement system, it is important to review the metric fundamentals. The important part is to know what makes the measurement effective.

The criteria for effective measurement are (11):

- Importance – the degree to which a measure connects to strategically important business goals rather than to what is simply to measure.
- Completeness – the degree to which a measure appropriately tracks the complete phenomenon rather than only a part of it.
- Punctuality – to track at the right time rather than being held to any date.
- Visibility – the measure is visible, public, known and tracked by those who are affected by it rather than collected privately for management only.
- Control – to monitor outcomes created by those who are affected by it and who have a clear connection from the measure to the results.
- Cost – effectiveness – the measure is efficient to monitor by the use of existing data and information or the data easy to monitor rather than demanding a new set of procedures.
- Interpretation – the measures create data that make clear sense of employee activities and that are easy to translate to employee actions.
- Simplicity – the degree to which a measure is easy to understand from every stakeholder's perspective.
- Concreteness – the measures are clearly defined so everybody can understand and relates to the measure.
- Collectable – the data can be collected in a way where the attempt demanded is proportional to the resulting usefulness of the measure.

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<sup>7</sup> The chapter 4. was processed according to:

PHILLIPS, Jack J. Investing in your company's human capital: Strategies to avoid spending too little--or too much. New York: Amacom, 2005. 288 s. ISBN 0-8144-0853-2.

- Team – the degree to which a measure will be valuable with a team rather than just an individual judgement.
- Credibility – the degree to which a measure provides appropriate information that are valid and credible in the eyes of managers.

The criteria listed above are crucial issues and should be explored when examining any kind of measure. To be effective, metrics should not only report results, but also need to be the first step in making the case for how strategies, practices and programs impact business performance.

## **5. Benefits of Human Resource Scorecard**

The Human Resource Scorecard brings the following benefits (6):

- Reinforces the difference between HR do-ables and deliverables – measurement system must distinctly differentiate between the deliverables influencing strategy implementation and do-ables that do not. Implementation of policy is not a deliverable until it has a positive effect on the HR architecture and arouses the right employee behaviour that drives strategy implementation. The suitable measurement system will encourage HR specialists to think both operationally as well as strategically.
- Allows cost control and value creation – human resource is expected to control costs for the company as well as fulfil its strategic objective which is to create value. The scorecard facilitates balance these two and find the optimal solution.
- Measures leading metrics – as there are leading and backward looking ratios in the performance measurement system; there are also drivers and outcomes in the HR value chain. Therefore, it is necessary to monitor the alignment of the HR decisions and systems that drive the HR deliverables.
- Evaluates contribution of HR to strategy implementation – the impact of HR Scorecard's measures provides the answer to the question concerning HR's contribution to firm performance. Each measure has a strategic reason thus managers can use these metrics as solution to business problems.

- Lets HR specialists effectively manage their strategic responsibilities – HR Scorecard emboldens HR managers to focus on precisely how their decision influence the successful strategy implementation. This is due to the systematic nature of the scorecard that provides a clear system to think in a systematic manner.
- Encourages flexibility and change – the fundamental nature of HR Scorecard helps protect measurement systems getting too standardised. Standardisation is suitable for things without dynamic nature but in the case of company it is quite the opposite. Its performance has a dynamic phenomenon; therefore every decision needs to be taken based on the past and future scenarios. The scorecard causes flexibility and change because it is focused on the company's strategy implementation which is change demanding.

The Human Resource Scorecard offers four perspectives (6):

1. Strategic perspective – measures success in achieving the five strategic thrusts. Hence the basis for the Human Resource Balanced Scorecard is achieving business objectives, the aligned HR strategic goals are the drivers for the complete model.
2. Operational perspective – measures HR's success in operational excellence. The main focus was on the areas of staffing, technology and HR processes and transactions.
3. Customer perspective – it is comprised of metrics of how HR is viewed by the key customer segments. Survey results were used to track customer perceptions of service and assess general employee engagement, competitive ability and links to productivity.
4. Financial perspective – addresses how HR adds measurable financial value to the organization, including metrics of return on investment in training, technology, staffing, risk management, cost of service delivery.

The Human Resource Scorecard approach follows logically from initial Balanced Scorecard model which is most commonly used at the corporate level. However, the

approach remains focused on long-term strategies and clear connections to business outcomes.

## **6. Building Human Resource Scorecard<sup>8</sup>**

In a global dynamic economy with serious challenges, HR specialists can help to positive change and increase in their company with the use of HR metrics. To build the scorecard, it is helpful to start with the company's strategy rather than look for "the best list" of measures. Thus, the starting point of each measurement project is to place it in the context of the company's strategic planning process. The selected HR metrics form HR Scorecard. This facilitates to link key Human Resource strategies to the overall strategies and goals for the company and when done well, it provides clear metrics regarding how Human Resources value to the company and becomes a proactive indicator of the strategic progress.

Company can count many HR metrics, but its HR Scorecard may measure only six or seven important targets.

Building an effective HR Scorecard means to link human resource performance metrics to company strategy and performance. Developing these links is the key success to an effective scorecard.

The phases in this process could be:

- To identify the critical strategic goals
- To identify the drivers for each goal
- To identify barriers to the achievement of each goal (e.g. missing employee competencies, lack of organizational capability,...)
- To determine key items that will drive necessary change

Careful consideration, concerning how Human resources must contribute in order to be successful, should be completed for every goal and strategy.

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<sup>8</sup> The chapter 6. was processed according to:

HARIDAS, Meghna. The HR Scorecard [online]. c2003 [cit. 2009-07-24]. Dostupný z WWW: <<http://www.hrfolks.com/Articles/strategic%20hrm/human%20resources%20scorecard.pdf>>.

## 6.1 Scorecard Options<sup>9</sup>

Several options providing different attitudes and philosophies for scorecard development exist. Six most used examples that represent these approaches are listed below.

### 6.1.1 Workforce Measurement Scorecard

One approach is to develop a scorecard that shows the basic workforce measures, from demographics to mobility to workforce relations. Workforce measurement scorecard is the attitude indicating the fundamental workforce measures, such as:

- Demographics profile – age, employment status, gender, ethnic diversity
- Productivity – a range of input and output measures
- Availability – availability and absence patterns of employee segments
- Mobility – flow of the workforce into, within and out of the company
- Performance and Development – skills profile of the company and the resources given to company's development
- Compensation and Benefits
- Workforce relations – labour relations, effectiveness and costs

These are traditional measurement fundamentals and often reflect early developments of the scorecard.

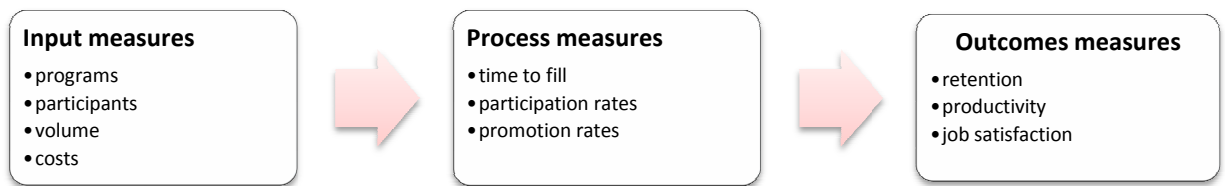
### 6.1.2 IPO Scorecard

IPO scorecard is the attitude examining human resources from the perspective of inputs, processes and outcomes. This method quickly presents the relationship of input to outcome and is a simplistic approach to the process.

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<sup>9</sup> The chapter 6.1 was processed according to:

PHILLIPS, Jack J. Investing in your company's human capital: Strategies to avoid spending too little--or too much. New York: Amacom, 2005. 288 s. ISBN 0-8144-0853-2.



*Figure 3: IPO Scorecard (Phillips, 2005, p.219)*

The inputs such as programs, participants and costs are put in several processes to show activity, progress, implementation, and the ultimate outcomes in simple, easy-to-connect-to measures, such as retention, productivity and job satisfaction.

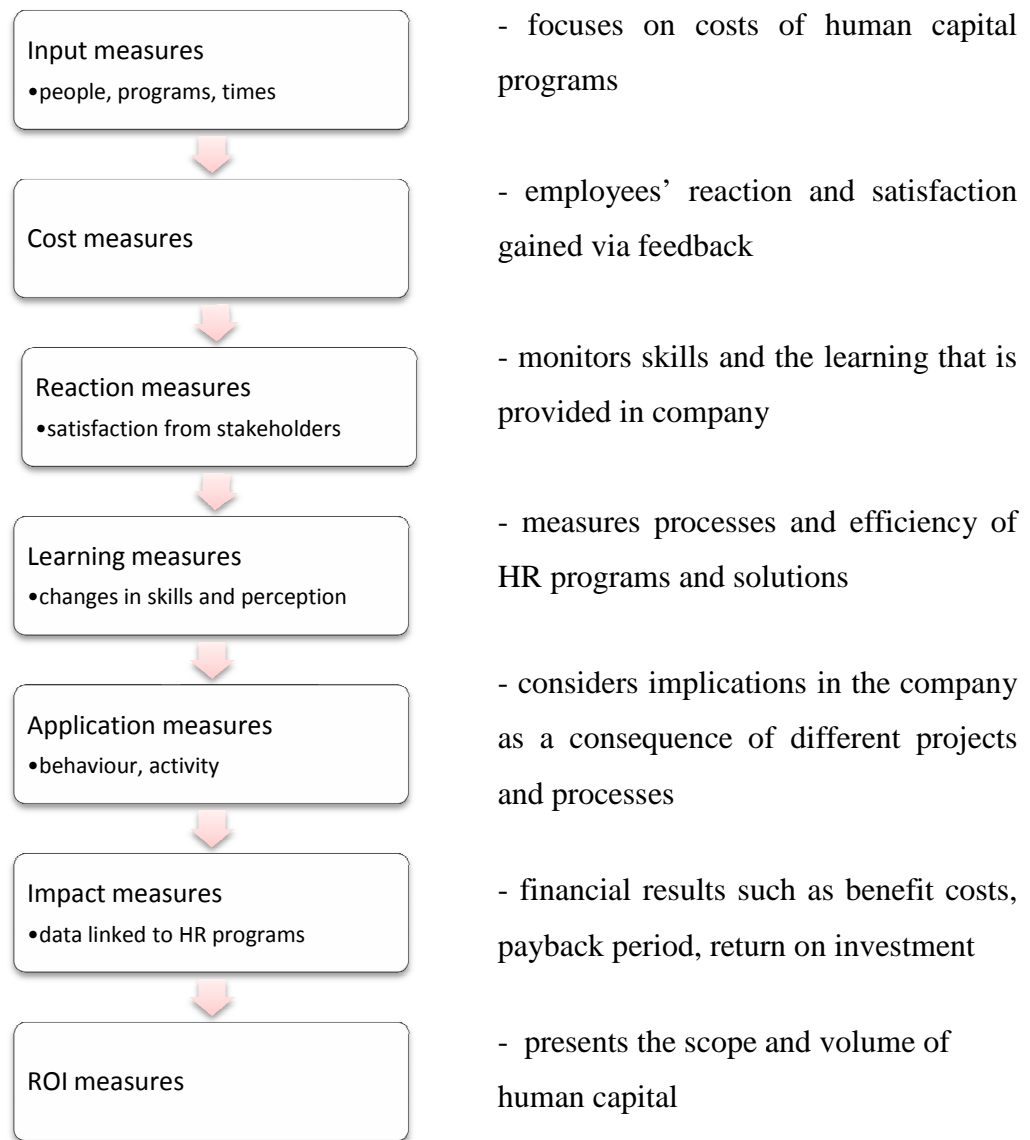
### **6.1.3 The Balanced scorecard process**

In this approach the human capital measurements are shaped into the Balanced Scorecard categories, according to Kaplan and Norton, which were mentioned before. The examples of human resource measures belonging to the financial category are e.g. Costs of human capital, Return on investment, Costs of program and processes. The customer category can include Stakeholder satisfaction, Reaction or Perceived value. To the internal processes category, the Process times, Completion rate or Participation rate can be comprised and to the last – learning & growth - category belong such measures as Number of programs or Hours of Trainings.

This method offers deeper sight than IPO scorecard, however, it is sometimes inappropriate to implement because not all HR issues suit into four categories. Thus, the scorecard may fail to provide the kind of needed balance.

### **6.1.4 The Causal chain scorecard**

The more complex approach provides the causal chain scorecard which is divided into seven categories of data and presents the causal chain that usually takes place in human capital projects. The data are taken from different perspectives and are both qualitative and quantitative, as shown in following figure.



*Figure 4: The Causal Chain Scorecard (Phillips, 2005, p. 221)*

The categories shown in the figure 4 are comprehensive and reflect the variety and type of measures linked to the human capital function in a company. They also reflect the data collected to show the impact of human resource solution, project, program or initiative. For example, if the retention solution is implemented to improve turnover, the success of the solution can be monitored along these seven categories (e.g. inputs of the number of individuals involved, the duration of solution; costs of the solution and its parts; reaction from stakeholders to the solution; learning and changes in knowledge required for the success of solution; application and implementation of solution; impact of turnover reduction; financial results).



### **6.1.5 Human resource process scorecard**

This process is connected with the human resources acquisition and retention. The process consists of 6 steps beginning with acquisition and ending with departure of employees from company.

The 6 steps are following:

- Acquisition (job growth, recruitment, demography)
- Preparation (experience, learning, knowledge, education)
- Maintenance (pay, benefits, employee ownership)
- Motivation (engagement, productivity, leadership)
- Retention (turnover, tenure, satisfaction)
- Departure (complaints, litigation)

Measures are monitored along the way. This method clearly states where measures are created and help determine where problems exist in the chain.

### **6.1.6 Transactional benchmarking**

Transactional benchmarking, in contrast to traditional, is a dynamic database where the users participating in a benchmarking project provide the data in real time. Thus the analysis allows the data to be divided in several ways important to the user that may not be involved in the static report. The traditional paper-based report is replaced by this dynamic database that immediately compares data to benchmarks.

## 7. Benchmarking

When company chose important HR metrics and developed effective HR scorecard, the next step is using these results in the right way. The data can be monitored in several ways depending on the desire of management and possibility of presentation. An internal assessment of human capital management is important as well as the other key element – benchmarking to other companies. Benchmarking is the commonly used tool of management practitioners in the late twentieth century.

### 7.1 What is Benchmarking

Benchmarking has been given many different definitions from different organizations and authors even if each aims to have the same conclusion. These are some of the definitions:

*“Benchmarking is the continuous process of measuring products, services and practices against the toughest competitors or those companies recognized as industry leaders”*

(1, p. 2).

*“Benchmarking is measuring own performance against best-in-class organizations to determine how they achieve their performance levels and using the knowledge to improve own performance”* (9, p. 3).

### 7.2 Types of Benchmarking<sup>10</sup>

In the literature, several classifications of benchmarking are recorded. Nevertheless, the main categorizations are internal, competitive and functional. The process is basically similar for each category but the main differences are what is to be benchmarked and with whom it will be benchmarked.

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<sup>10</sup> The chapter 7.2 was processed according to:  
KOZAK, Metin. Destination Benchmarking : Concepts, Practices and Operations. Cambridge, MA: CABI Pub., c2004. 216 s. ISBN 0-8519-9745-7.

### **7.2.1 Internal benchmarking**

Internal benchmarking involves two-way communication and sharing opinions between divisions within the same company or between companies operating as part of the chain in different countries. When any part of a company has a better performance results, others can learn how this was achieved.

The advantage of internal benchmarking is the ability to deal with partners who share a common language, culture, system, having easy access to data and giving a basis for the future comparisons. The outcomes of internal benchmarking, therefore, can be presented quickly. From the other hand, this type is time-consuming because competitors could be engaged in increasing their market share while other company is busy measuring its internal performance.

### **7.2.2 Competitive benchmarking**

Competitive benchmarking refers to a comparison with direct competitors only. This method is very sensitive because of the difficulty to gain a healthy cooperation with direct competitors and reach primary sources of information. The competitive benchmarking is believed to be more rational for larger companies, as they have the infrastructure to support quality and continuous improvement.

The advantage of using this type of benchmarking is creating a culture that values continuous improvement to reach perfection, increasing sensitivity to changes in the external environment and sharing the best practices between partners. On the other side, the disadvantage can be the difficulties in gaining the data from competitors and applying lessons to be learnt from them. Another risk can involve the tendency to focus on the factors that make the competitors specific instead of looking for the factors contributing to own excellent performance.

### **7.2.3 Functional benchmarking**

Functional benchmarking relates to comparative research and compare business performance not only against competitors but also against the best companies acting in similar business areas and performing similar activities or having similar problems, but in the different industry.

It can be easier to gain the data in such arrangements as best companies are more likely to share their experiences and results, however, it can take a long time to complete and researches may need a lot of modifications in order for companies to set their own standards.

### 7.3 Why Benchmark

Several authors have mentioned the extent to which benchmarking is appropriate and its positive or negative results that have impact on success of performance improvement within the company. Nevertheless, it seems obvious, by reviewing different sources, that benchmarking does following:

- It helps companies to understand in which areas they are strong or weak depending upon changes in supply, demand and market conditions.
- It helps to better satisfy the needs of customers by developing new standards and objectives.
- It motivates employees to achieve new standards, developments and improves the motivation of employees.
- It enables companies to realize what level of performance is really possible by monitoring others and how much improvement can be achieved.
- It documents reasons as to why these differences exist.
- It helps companies to improve their competitive advantages by stimulating continuous improvement to maintain world-class performance and grow competitive standards.
- It promotes changes and delivers enhancement in quality, productivity and efficiency which in reverse bring innovation and competitive advantage.
- It is a cost-effective and time-efficient way of developing a pool of innovative ideas from which the most practicable examples can be applied.(9)

As the disadvantages of successful benchmarking research, can be mention time constraints, competitive barriers, cost, lack of management commitment, lack of professional human resources, protest to change, poor planning and short term expectations.

A wrongly executed benchmarking can also lead to a waste of human, time and financial resources or to stain company's reputation.

Another risk, involved in benchmarking other companies and in adopting new standards into one's own company, can be the fact that there is no the best way, because it varies from one company to another and every company differs in terms of mission, culture, environment and technological tools available.

Therefore, companies should spend little time on benchmarking instead focusing on their own planning procedures with respect to their own needs (9).

The theoretical part was focused on the familiarization of human resource measurement importance and problems - the tool that facilitates the decision making process in specific personnel questions and should be applied in the conditions of any company.

The formulas mentioned in the chapter 3 are used for calculation of metrics monitored in IT/Telco Company as well as their evaluation.

### **III. Practical part**

Human Resource function has serious impacts on overall business performance. In fact, company's competitive advantage, for the most part, depends on the way it manages its human capital. When taking to account human capital it is necessary to determine the specific metrics to monitor. These metrics contribute to significant business decisions and provide measurable results.

The set of metrics is called Human Resource Scorecard and it lets company do two important things:

- Manage human resources as a strategic asset
- Demonstrate human resources' contribution to company's financial success

For the practical part, I have chosen the IT/Telco Company because of the possibility to work there and observe the human resource processes. The main part of my job specification was the very monitoring and calculation of human resource metrics and their preparation and arrangement into quarterly business review for internal benchmarking. According to the information gained from Human Resource Manager and other HR staff members, there were the requirements for overall review and optimization.

## **8. IT/Telco Company**

The company did not wish to disclose certain information, especially the name, address, history and specific financial data.

Business field: IT/Telco

Status: Limited Liability Company

Established: 08/09/1992

Registered capital: CZK 1 500 000,--

The company operates, according to the global human resource management consulting companies (e.g. Hay Group and Hewitt), in the IT/Telecommunication sphere and is a part of worldwide corporation with the main headquarters in the USA.

Company is the world leader in the production of microscopes for nanoscale research, serving a broad range of customers around the globe (nanotechnology is the science of characterizing, analyzing and fabricating materials smaller than 100 nanometers) and it maintains research and development centres in North America, Europe, and Asia, and sales and service operations in more than 50 countries around the world.

The line of business is:

- Production, installation and repairs of electrical machines and instruments
- Research and development in the field of natural and technical sciences or social sciences

Currently the corporation has more than 1600 employees all over the world, out of which 284 is in the Czech Republic. The corporation is divided into three divisions:

- NanoResearch & Industry
- NanoBiology
- NanoElectronics

## 8.1 Company Vision, Mission, Values

Company's vision is to be the leader in providing tools for nanotechnology that enable its customers to change the world for the better.

Its mission is to be a profitable growth company committed to its customers' success by providing world-class solutions to challenges at the nanoscale. Company is devoted to bringing leading technologies to markets with the highest quality products and services.

Company honours following values:

- Integrity - highest ethical standards in all that company does
- Customer Focus - dedicated to understanding its customers' needs and helping them succeed
- Results - accountable for consistently meeting commitments to its customers, employees and shareholders
- Teamwork - working together through open communication, mutual respect and alignment to common objectives
- Innovation - continuously creating new and better solutions
- Quality - unbending commitment to quality and operational excellence

## 8.2 Products Portfolio

Company designs and manufactures a wide variety of electron microscopes and nanotechnology tools and components. The electron microscope system types include:

- Scanning Electron Microscopes (SEM) – these are used for inspecting topographies of materials with a magnification range that encompasses that of optical microscopy and extends it to the nanoscale. They also provide chemical composition analysis.
- Transmission Electron Microscopes (TEM) - use high-voltage electron beams to acquire ultra-high resolution sample images down to sub-Ångström levels for analyzing the atomic structure, crystallographic structure and composition of specimens.
- DualBeam™ systems - scanning electron microscope and focused ion beam capabilities combined, are the preferred solution for 3D microscopy and analysis



serving material characterization, industrial failure analysis and process control applications. They are designed to deliver integrated sample preparation and microanalysis below 1 nm for high-throughput semiconductor and data storage fabs and materials science and life science labs.

- Focused Ion Beam (FIB) tools - systems utilize a finely focused beam of gallium ions operated at low-beam currents for imaging and at high-beam currents for site-specific milling. Their versatility make them popular for a wide variety of applications, including advanced circuit edit and revealing below-the-surface defects in advanced materials and devices.
- Specialty Tools - specialty tools are designed and engineered to meet customer's specific needs. From reliable preparation of cryogenic samples for pharmaceutical research to preparing TEM samples from a 300 mm wafer in a semiconductor lab, these tools will enable customer to perform work more quickly, precisely, and easily.

Main customers are e.g. Micron, Inter, Hitachi, Motorola, TDK, Toshiba, Sony, HP, Pfizer, Ford, Johnson & Johnson, Bayer, Audi, BMW, Toyota, Mercedes Benz, Nokia, LG, Samsung, Berkeley, Yale University, Stanford University, Harvard University, EMBL, and many others.

## **9. Human Resource Metrics**

Measuring the human resource function has many benefits. HR metrics can be used to assist with the allocation of resources, strategic decision making, recruiting, talent management practices, compensation & benefit programs and more. In addition, a subset of key Human Resource metrics used in a scorecard can focus managers on important issues and effectively drive change in an organization.

The overall aim of my diploma thesis was to suggest possible recommendations for optimization and efficiency improvement of internal human resource processes in IT/Telco Company.

The main idea of this diploma thesis is that calculation of human resource metrics contributes to effective managing of human capital that has consequently impact on successful business strategy and whole performance.

The partial aims of this thesis were to calculate individual metrics for periods of the years 2008 and 2009; evaluate results; benchmark them with the results of target values set by corporation and on the basis of theoretical findings and consultations with human resource manager in IT/Telco Company propose possible solutions for improvement.

For identification of present state of the company and subsequent calculation of metrics I carried out mainly the secondary research that consisted of an analysis of the secondary data, such as personnel files which are administered in SAP and Access databases; company intranet; and the wages administration administered in Helios program.

The primary research, by means of observation (the qualitative approach) of company environment and its impact on some metrics, was applied as well.

As a post research, the Human Resource Manager feedback about the correctness of calculations and their evaluation, as well as recommendations, was provided.

In IT/Telco Company, human resource department monitors various metrics. They are listed in following table as well as the internal frequency of their measurement and target results that should be achieved within corporation.

The outcomes and results are presented in quarterly business report. What metrics will be involved in the quarterly system of measurement and reporting is given by internal corporate directives, according to which all worldwide division comply with.

As a tool for comparison and evaluation, company uses the internal benchmarking that was described in the theoretical part. Internal benchmarking involves two-way communication and sharing opinions and results between divisions.

The quarterly frequency of measurement is set by corporation according to the American law, where companies are required to draw up and issue quarterly business reports. The budget is also draw up quarterly. The advantage of quarterly measurement is among others the data accessibility and monitoring short term efficiency.

As the data source the company's internal information system and databases were used.

In the diploma thesis, the metrics are calculated for the periods 2008 and 2009.

The formulas for the individual metrics were described in the theoretical part; therefore, they are not mentioned in this part no more. The individual metrics are described below.

The list of metrics monitored by company's human resource department

Category	Metric	Frequency of Measurement	Target Values
Workforce stability	Turnover <ul style="list-style-type: none"> <li>• Overall</li> <li>• Desired</li> <li>• Undesired</li> </ul>	Quarterly Quarterly Quarterly	Optimal > 1% < 5%
Recruitment	<ul style="list-style-type: none"> <li>• Recruiting sources               <ul style="list-style-type: none"> <li>○ Agency referral</li> <li>○ Employee referral</li> <li>○ Internet</li> </ul> </li> <li>• Time to fill</li> <li>• Cost per Hire</li> </ul>	Quarterly Quarterly Quarterly Quarterly Quarterly	< 25% > 26% > 49% < 90 days Minimal
Workforce profile	<ul style="list-style-type: none"> <li>• FTE, Headcount</li> <li>• Gender diversity</li> <li>• Age diversity</li> <li>• Educational diversity</li> </ul>	Quarterly Annually Annually Annually	288 Optimal Optimal Optimal
Employee relations	<ul style="list-style-type: none"> <li>• Absenteeism</li> </ul>	Quarterly	< 4%

Table 2: Metrics Monitored by IT/Telco Company

IT/Telco Company monitors human resource metrics in four categories – workforce stability, recruitment, workforce profile and employee relations. For each metric, there are target values set by the corporation. The most of them are clearly defined.

The overall turnover should be, according to corporate directives, optimal. This means to be comparable or lower when compared with competitors. The values recommended by consulting company PricewaterhouseCoopers for overall turnover are between 5 - 10% (21).

When age diversity is concerned, the optimal values for individual age groups in IT/Telco Company, based on the competence model set by corporation, are:

Age	Target Values
0 – 25	10%
25 – 35	40%
35 – 50	35%
50 and more	15%

*Table 3: Age Diversity-target values (source: author)*

The competence model determines the key characteristics and skills of employees divided into individual age groups. Each group is assumed to have its specific level of competences (e.g. employees of age 0-25 years are highly initiative, dynamic, and ready to learn; 25-35 – employees have high level of communication, creativity, intercultural sympathy, the personal effectiveness has rising trend; 35-50 – less dynamic and initiative, high level of managing, communication, strategic; 50 and more – great strategy thinking, managing, less energy, etc.)

The age 25 - 35 is very productive and that is why this group is requested to have the greatest proportion.

The optimal composition of male and female employees is, according to corporation, 30% of females and 70% of males based on the business orientation.

The values for educational diversity are set by corporation and are following:

- Elementary 4%
- Secondary 40%
- Higher 50%
- Doctorate 6%

Based on the business orientation, the level of education is assumed to be high; therefore, the company supports further studies.

## 9.1 Turnover

Turnover is a ratio reflecting the number of employees who left company in a given period of time. As a denominator, company uses full time job equivalent instead of traditional average number of employees. This measure predicates the fluctuation and structure of employee fluctuation in company and is monitored quarterly. The values of overall, desired and undesired turnover are summarised in the following chart.

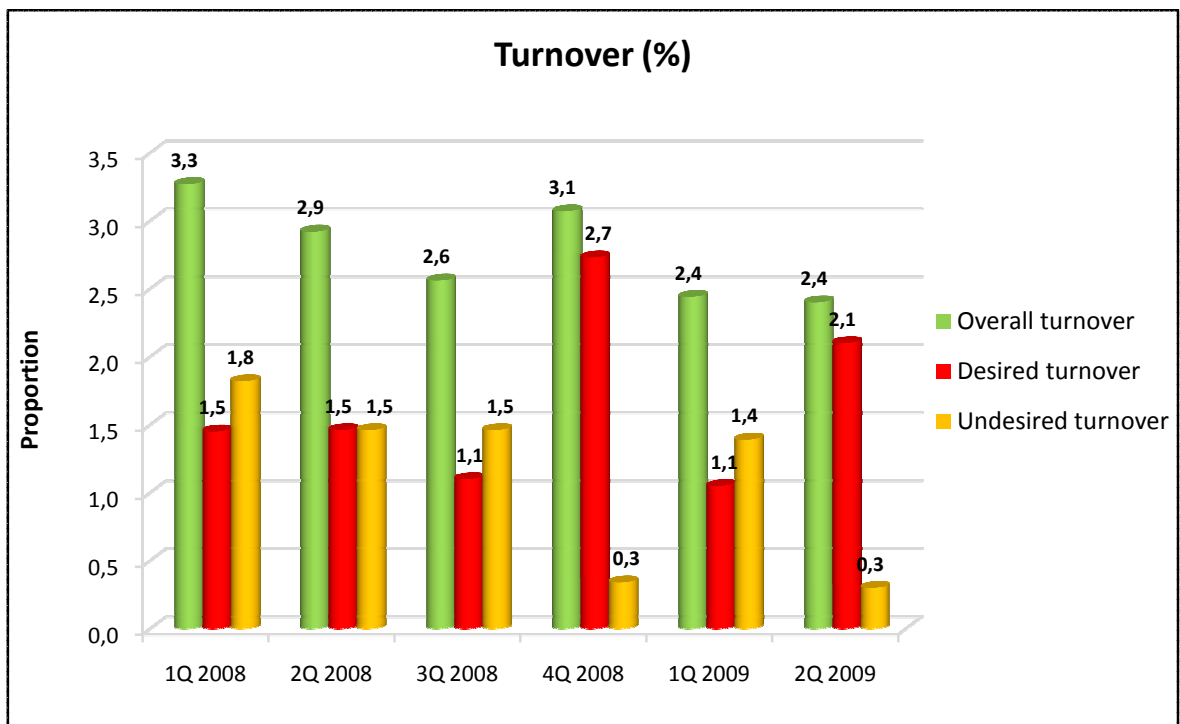


Chart 1: Turnover (source: author)

Company reached the highest overall turnover in the first quarter of 2008. In this period the undesired turnover was the highest as well. It means that 1.8% of employees optionally left the company in a given period.

The highest value of desired turnover (employees who had to leave the company because of low performance or downsizing) was measured out in the end of the year 2008 (2.7%). In the same quarter the undesired turnover was the lowest (0.3%).

In all periods desired and undesired turnover fulfilled the target values set by corporation. The desired turnover was slightly higher than 1% in each period; on the other side undesired turnover was less than 5 percent all along.

## 9.2 Workforce Profile

Company is divided into 12 divisions:

- Finance and Accounting
- Logistics
- Quality
- Sourcing
- Information Technology
- Research and Development
- Facilities
- Product Engineering
- Manufacturing
- Sales and Services
- Human Resources
- Administration

For organizational structure see Appendix 1.

### 9.2.1 Headcount and FTE

Headcount and full time job equivalent are monitored quarterly. FTE is based on the specification stated in employment contract of each employee.

On the date of 30 June, company had 284 employees. The company headcount and full time job equivalent, for all monitored periods, are shown below.

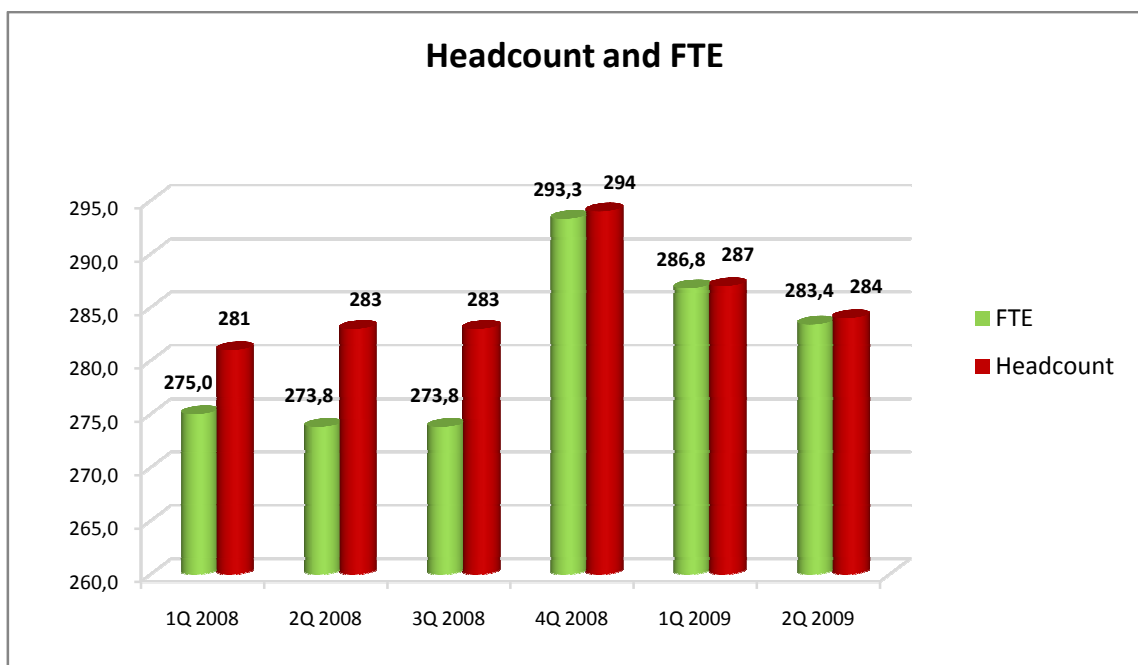


Chart 2: Headcount and FTE (source: author)

According to the corporation adjustment, the division in the Czech Republic is allowed to employ maximum of 288 employees, which was fulfilled in all periods except the fourth quarter of 2008, when there were the most employees, as well as the highest FTE. On the other side, the lowest numbers were early the year 2008.

### 9.2.2 Educational diversity

From the cluster of possible educational levels the majority of company employees, has higher education of which 40.8% are employees with master degree, 4.9% with doctorate and 2.8% with bachelor degree. Secondary education, finished with leaving examination, follows this group. The educational diversity is in the company monitored since the year 2009 and the frequency of measurement is annual. The data are summarized in following chart and table.

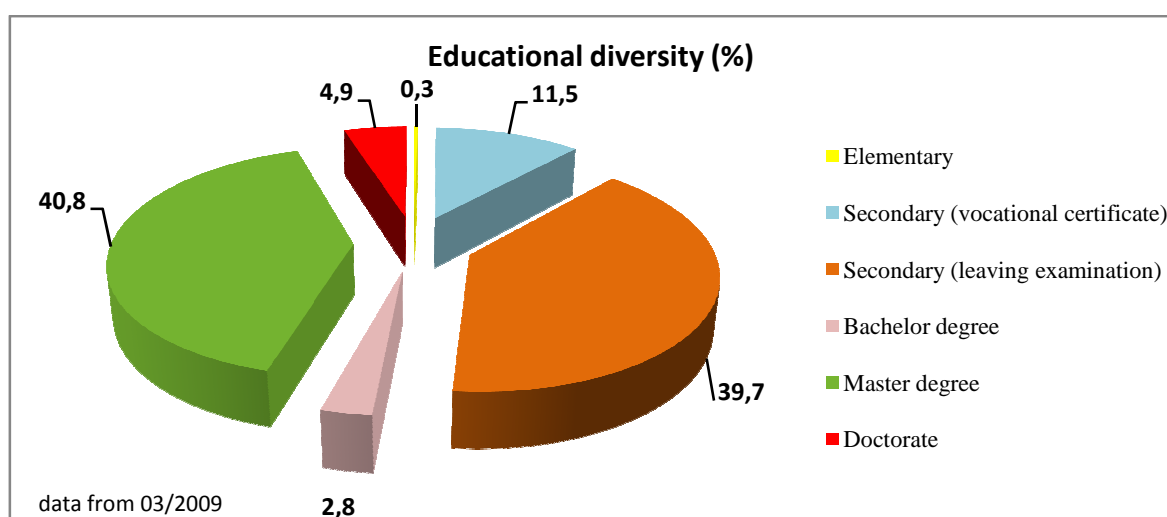


Chart 3: Educational Diversity (source: author)

Education	Number of Employees	Proportion (%)
Elementary	1	0,35
Secondary (vocational certificate)	33	11,51
Secondary (leaving examination)	114	39,75
Bachelor degree	8	2,79
Master degree	117	40,79
Doctorate	14	4,88
Total	287	100

Table 4: Educational Diversity (source: author)



When take into consideration the orientation of the company, it is from a half focused on manufacturing, where the secondary education is required. Both the secondary education with vocationally certificate and leaving examination, amount to slightly above 50% from overall educational diversity which is above the target value. In division such as product engineering, research and development, quality or finance, the higher education is required. The proportion is slightly above 43% and is under the target value as well as the number of employees with doctorate. Still the number of employees with university degree has rising tendency because the company support further studies.

### **9.2.3 Age and gender diversity**

Age and Gender Diversity are monitored annually always towards the end of the first quarter. This metric, as well as the educational diversity, was measured for the first time this year. On this date there were 287 employees of which 45 (15.68%) women and 242 (84.32%) men in 2009. The company would like to have 30% of females and 70% of males. These values company is trying to reach also by supporting females on maternity leave and their return to work.

Company has divided employees into four age brackets according to the year of birth.

- From 0 to 25 years (2009 - 1984)
- From 25 to 35 years (1983 - 1974)
- From 35 to 50 years (1973 - 1959)
- 50 years and more (1958 -)

This particular division of age groups was made on the basis of general life periods.

The age diversity sorted by gender is shown below.

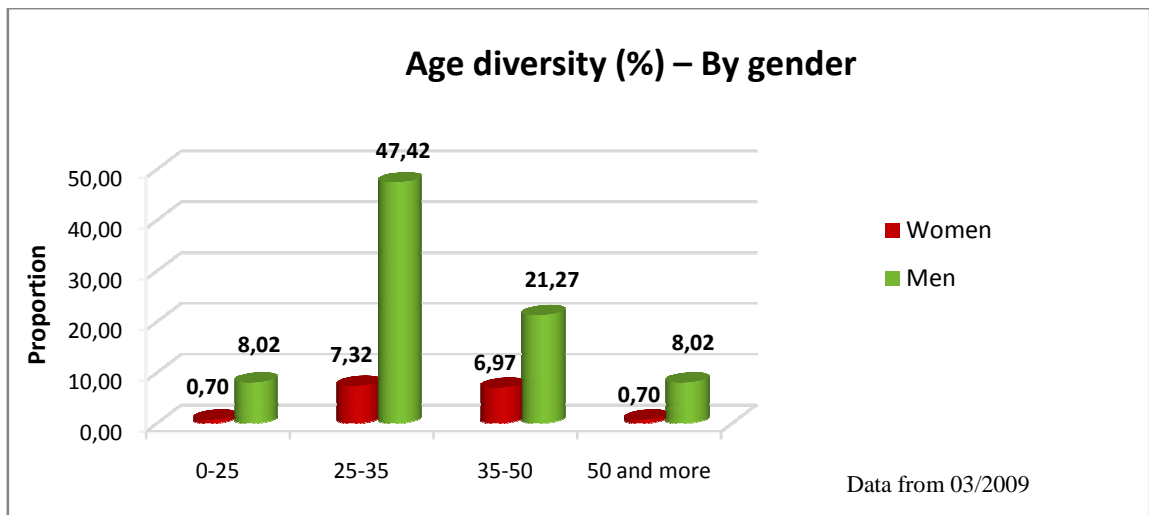


Chart 4: Age Diversity (source: author)

Age	Women 2009	Men 2009
<b>0-25</b>	2	23
<b>25-35</b>	21	136
<b>35-50</b>	20	61
<b>50 and more</b>	2	23
<b>Total</b>	45	242

Table 5: Age Diversity (source: author)

In 2009, when take into account females, the majority of employees is in the second age group (70%) followed by the number of employees in the third age group (7%). The first and the fourth age groups contain identical number of females (0.7%).

Exactly the same situation is with males. The most numerous age bracket is the second one (from 25 to 35 years) where there are 157 male employees.

Company monitors the national diversity as well. From the total staffing levels, there are 5 foreign employees (1.74%).

When take into account the period of company's existence (since 1992) we can say that the firm is very young which also refers to the age diversity. It is focused mainly on the most productive generation which is creative and innovative (the second age group). This fact also influences the company culture, benefits and the way of communication.

But still age diversity should be more balanced. According to François Höpflinger, the sociology professor at the University of Zurich, the age-mixed working teams are in certain cases more efficient than age-homogenous teams. He says that: *“Younger isn't necessarily better in the workplace. In fact, the most efficient teams are made up of young and older workers.”* (23)

There is no getting around the fact that people in developed nations are living longer, which results in the demographic aging of the workforce. On the basis of study on aging by the Swiss National Research Program, Höpflinger says that: *"From a demographic point of view, the working population will remain largely in the hands of older wage earners, and economic change will have to be increasingly supported by middle-and old-aged employees"* (23).

For instance can be mentioned the knowledge and experience transfer from senior to junior employees, the age balance in the seller-customer relationship or expertise based on long-time work experience. The age balance can facilitate to retention of knowledge competences.

The proportion of men and women employed is very unequal, what is caused by specific orientation of the business.

### 9.3 Recruitment

In the category of recruitment, company monitors:

- Hiring volume
- Hiring sources
- Times to fill
- Cost per hire

#### 9.3.1 Hiring volume

The hiring volume in the IT/Telco Company is monitored quarterly and reflects the number of candidates with whom the employee contract was signed. The hiring volume in monitored periods is following.

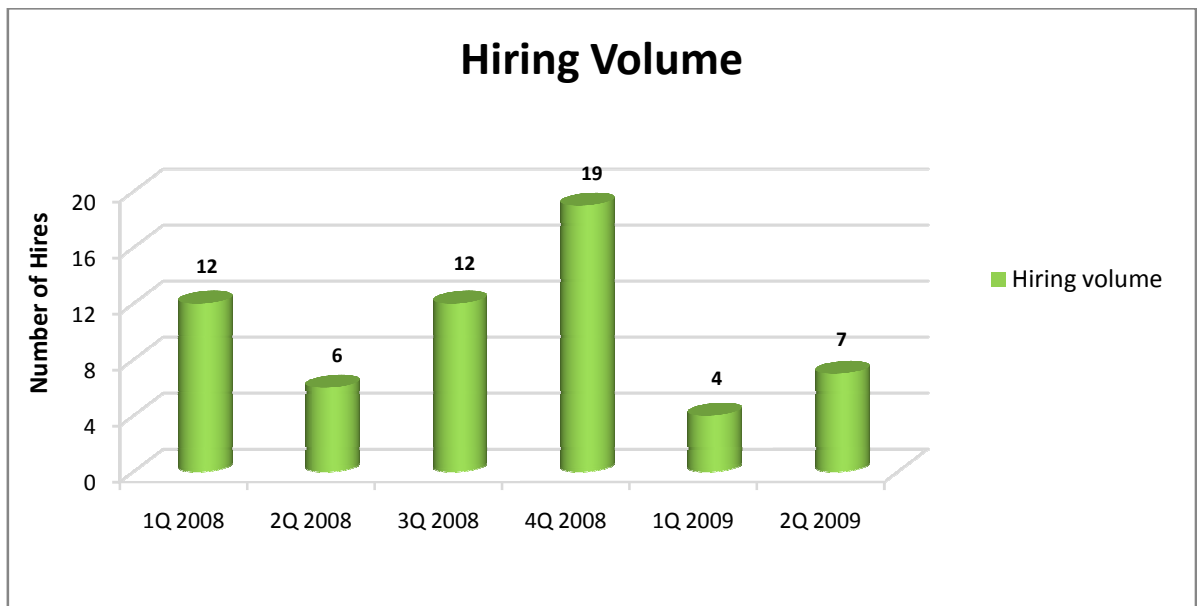


Chart 5: Hiring Volume (source: author)

Period with the highest number of hired candidates was the fourth quarter of 2008 with 19 candidates.

The total number of hired candidates in the first quarter 2009 was 4; in the second quarter 7 hired candidates.

### 9.3.2 Hiring sources

Looking for qualified diverse candidates requires using different sources. Therefore, company uses three possible sources.

- Personnel placement service (Agency referral)
- Employee referral
- Internet

Agency referral reflect the number of candidates hired on a basis of the personnel placement service recommendation; employee referral is the number of candidates hired on the basis of the employee recommendation and the internet source refers to the candidate volume hired on a basis of internet advertisements.

Percentage, with which individual sources participate in hiring candidates and the number of candidates hired on a basis of individual sources, are shown in following chart and table.

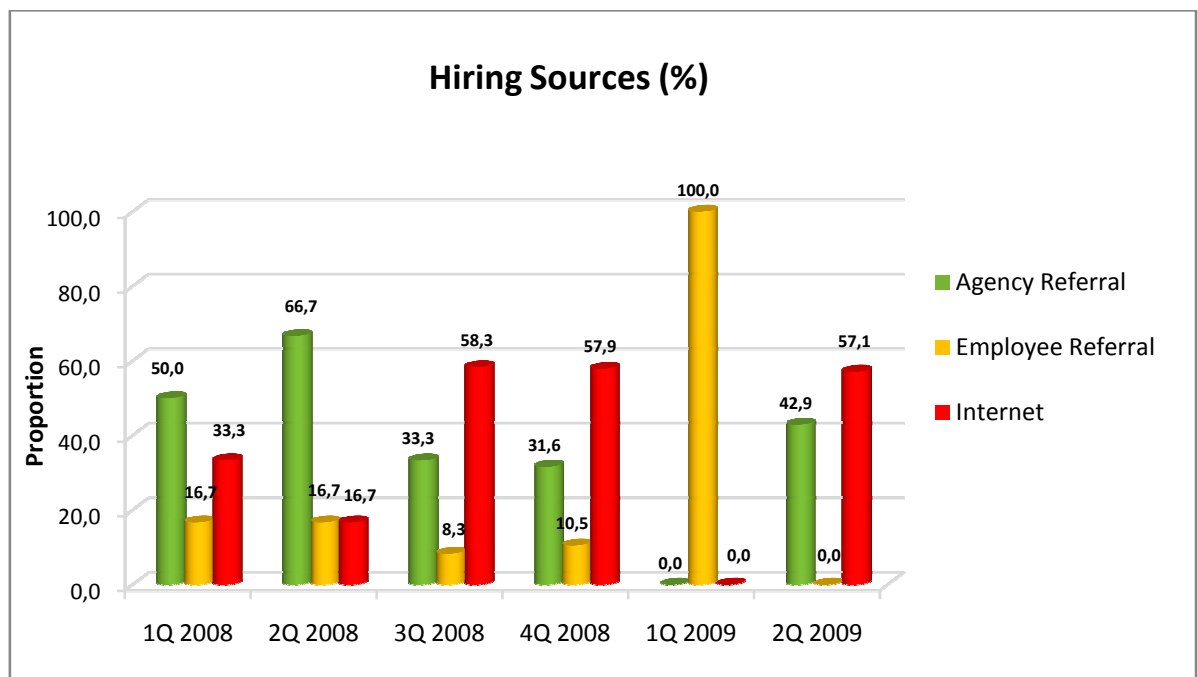


Chart 6: Hiring Sources (source: author)

<b>Term/Hiring Source</b>	<b>Agency Referral</b>	<b>Employee Referral</b>	<b>Internet</b>	<b>Total Number of Hired Candidates</b>
<b>1Q 2008</b>	6	2	4	12
<b>2Q 2008</b>	4	1	1	6
<b>3Q 2008</b>	4	1	7	12
<b>4Q 2008</b>	6	2	11	19
<b>1Q 2009</b>	0	4	0	4
<b>2Q 2009</b>	3	0	4	7

*Table 6: Hiring Sources (source: author)*

Early the year 2008, twelve candidates were hired. The main source of these candidates was agency recommendation (50%) followed by internet advertisements (33.3%). Similarly in the second quarter of 2008, four candidates out of six were hired on the basis of agency referral, which was around 67% from the total number of hired candidates. The rest of hired candidates applied for position via internet advertisements and employee referral, both equally (16.7%).

In the next two quarters of 2008, the main source of candidates was internet, when more than half of hired candidates applied on the basis of internet advertisements. The second largest source was agency recommendation, in both periods around 30%.

In the first quarter of 2009, the pure source of hired candidates was employee recommendation. In the second quarter, three candidates out of seven were hired on the basis of agency referral, which was around 43% from the total number of hired candidates. The rest of hired candidates applied for position via internet advertisements. The company's effort is to reach as high proportion of employee referrals as possible as it is the cost saving source of candidates. As mentioned above, this was reached only early the year 2009.

### 9.3.3 Cost per hire

Cost per hire is the expenditure spent in order to bring a candidate on board. In the company, there are factors affecting the total cost per hire:

- agency placement fees (for employing services of personal agencies)
- employee referral bonus (financial benefit for employees who recommend candidate who consequently is hired)
- advertising fees (for advertising on internet or in other media)
- personality diagnostic - if requested (the online candidate diagnostic provided by private company)

The costs per hired candidate, divided according to the affecting factor, are shown below.



Chart 7: Costs per Hire (source: author)

<b>Term/Expense</b>	<b>Agency fee CZK</b>	<b>Employee referral CZK</b>	<b>Advertising CZK</b>	<b>Diagnostic CZK</b>	<b>Total CZK</b>
<b>1Q 2008</b>	427 000	11 520	2 420	0	440 940
<b>2Q 2008</b>	387 200	6 720	1 320	7 500	402 740
<b>3Q 2008</b>	279 000	16 800	3 080	0	298 880
<b>4Q 2008</b>	716 500	18 384	4 180	18 750	757 814
<b>1Q 2009</b>	0	14 880	1 214	0	16 094
<b>2Q 2009</b>	432 500	0	4 644	0	437 144

*Table 7: Costs per Hire (source: author)*

The highest costs per hire were reached in the fourth quarter of 2008 (757 814 CZK) what refers to the highest number of hired candidates – in that period 19 candidates were hired.

The company aims to achieve as high proportion of employee referrals as possible because of its cost-saving characteristic.

In the chart and table, we can see that even if company has the financial benefit for employees who recommend a candidate for particular position, still the highest proportion of total costs per hire forms an agency referral.



### 9.3.4 Time to fill the position

Time to fill the specific position shows how long does it take to hire candidate from the date when the request is approved by corporate HR manager till the job offer is accepted or contract of employment is signed. The metric is monitored quarterly and the result is number of days from requirement specification for position occupation till the end of selection procedure for position. The metric predicates ability to fill the position in an effective way and the level of company position on the labour market.

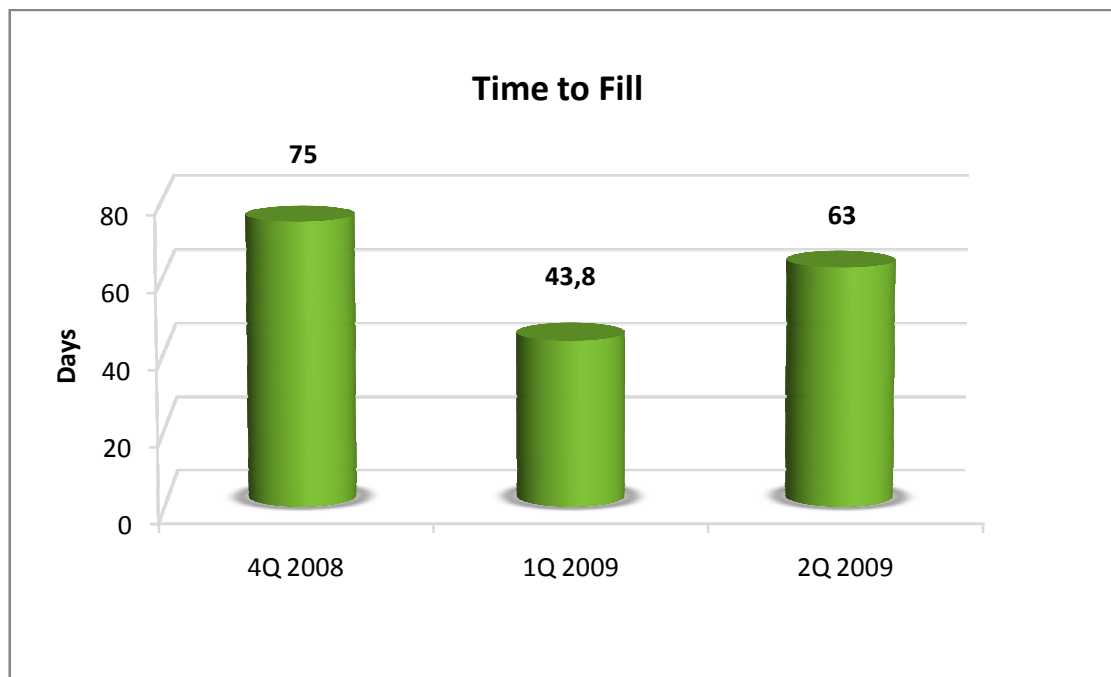


Chart 8: Time to Fill (source: author)

There were 19 candidates hired, in the last quarter of 2008 and the time to fill the positions was 75 days.

In the first period the total number of hired candidates, as mentioned above, was 4. According to the formula, the time to fill the position in that period lasted less than 44 days. In the second quarter, the period increased about 44% and so lasted 63 days.

The metric of recruitment efficiency – the time to fill – has been monitored since the fourth quarter of 2008. The target value 90 days is adjusted according to the term of notice in order to ensure the certain position is filled. All along the monitored time, this metric has not exceeded the target value.

## 9.4 Absenteeism

Absenteeism reflects the percentage of lost work days due to unplanned events, such as illness or injury and company monitors it quarterly. It predicates the level of employee satisfaction and HR processes, influenced by external unplanned events.

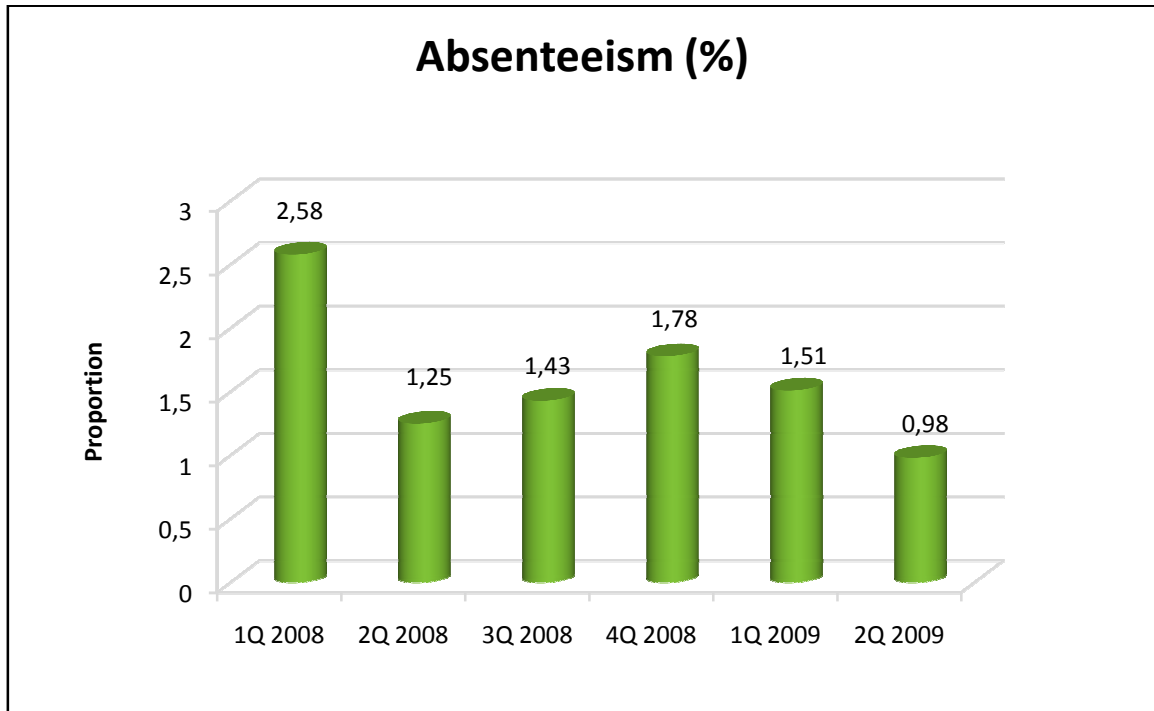


Chart 9: Absenteeism (source: author)

The highest result in monitored periods was reached in the first quarter of 2008 (2.6%). The term with the lowest percentage was the second quarter of 2009 (0.98%). The absenteeism has declining tendency that can be caused both by good employee health state or the financial reasons. Employees tend to work even though they are ill because of the low level of sick benefit.

## **10. Recommendations**

On basis of theoretical knowledge from literature used for this diploma thesis; information gained in the company through responsible officials and after rigorous analysis of human resource processes in IT/Telco Company, I came to conclusion, that in the internal human resource processes certain deficiencies exist.

In this section, I would like to describe my personal recommendation which could company use in the future to optimization and efficiency improvement of internal human resource processes.

### **10.1 Summary and Evaluation of Monitored Metrics**

As company is a part of corporation, it has to follow its directives and also the target values appointed for individual metrics. The monitored metrics as well as corporate target values are listed in the Table 2 (p. 43).

#### **10.1.1 Turnover**

There are three types of turnover monitored – overall, desired and undesired. In all mentioned types company reached very good results that fulfil corporate requirements in all periods. On the other side, when take into account the situation of employee turnover in the Czech Republic, company has slightly higher result. According to the investigation of PricewaterhouseCoopers company called “HR Controlling2007” the annual median value for overall employee turnover in Czech Republic was 14.8% in 2007 (more actual data were not provided), but the values recommended for overall turnover are from 5 to 10% (21).

When calculate the annual turnover in IT/Telco Company for the year 2008, the result was 11.83% which is, as mentioned above, slightly higher.

High turnover has a negative impact not only on the financial costs (e.g. recruiting and training of new employees), but also on operating results especially from the view of assurance of company effective operation. It is also important to consider de-motivation and greater working load of employees who have to replace missing colleagues.

Nevertheless this ratio is within corporate standards, thus the recommendation is to maintain present condition.

### **10.1.2 Workforce profile**

In this category, headcount, educational, age and gender diversity are monitored. For the headcount the headquarters set the limitation of 288 employees for Czech division what was fulfilled in all periods except the fourth quarter of 2008. In that term, company exceeded this limit about 6 employees what makes up 2.1%. However, nowadays company meets the criteria set by headquarters; therefore it should keep this trend also in the next periods.

The educational diversity in company is on the optimal level according to its orientation, which is from a half focused on manufacturing, where the secondary education is required. In company the number of employees with secondary education amounts to slightly above 50%. On the other side, in division such as product engineering, research and development or quality, the employees with advanced education are required. This was also fulfilled even if the number of employees with doctorate should be higher. Still this is not required by corporation and thus, no recommendations in this section are needed.

The age diversity should be more balanced. The group with the highest representation is the second one (from 25 to 35 years), which is on one side young, creative, flexible and can bring new ideas into the company, but on the other side it can lack sufficient expertise. The age-mixed structure can be more efficient than age-homogenous in examples such as the knowledge and experience transfer from senior to junior employees, the age balance in the seller-customer relationship or expertise based on long-time work experience.

As the age of current employees cannot be changed, I recommend focusing on recruiting new employees who would be included into the third or fourth age category and have thus more working expertise - but, of course, with a respect to specific position requirements.

### 10.1.3 Recruitment

In the recruitment section, hiring sources, time to fill the position and costs per hire are monitored.

Hiring sources are divided into agency referral, employee referral and internet.

All sources have the target value defined:

- Agency referral < 25%
- Employee referral > 26%
- Internet > 49%

With respect to results calculated, the target values in this section were mostly unachieved. The agency referral was, in all periods, higher than 25%, on the other side employee referral and internet sources were often lower than the values required. This also refers to the costs per hire which are for the most part formed by agency fees.

The first possible solution is in the area of internet advertising. Nowadays company advertises the positions on its websites and website [www.jobs.cz](http://www.jobs.cz). When needed, company uses the specialized personnel agencies (e.g. for IT or management position), which are high-priced. For this kind of positions at present time also specialized websites exist and the fees are lower than for the services of personnel agencies.

The examples of such websites are following:

Specialization of website	Contact
Information Technology	<a href="http://www.itkariera.com">www.itkariera.com</a>
Information Technology	<a href="http://www.workinit.cz">www.workinit.cz</a>
Information Technology	<a href="http://www.abcprace.cz">www.abcprace.cz</a>
Specialized and Management Positions	<a href="http://www.prace-jobcity.cz">www.prace-jobcity.cz</a>

Table 8: Examples of Job Portals

The examples of fees for advertising on individual websites are summarized below.

Website	Fee
www.itkariera.com	10 advertisements/month – CZK 2471*
www.workinit.cz	3 advertisements/month – CZK 1785
www.abcp prace.cz	5 advertisements/month – CZK 3250
www.prace-jobcity.cz	prices not provided on website

\* converted from EUR by exchange rate 25.7 valid on 14 August, 2009

*Table 9: Examples of Fees for Advertising*

The second solution is in the area of employee referral. Currently, when employee recommends certain candidate for position, he/she receives the bonus of 2% of his/her annual salary if the candidate is successful and remains employed for at least three months. To increase motivation and employee effort when searching candidates, the company could raise the percentage or set the fixed sum of financial bonus.

Time to fill the position should not exceed 90 days from the date when the request is approved by corporate HR manager till the job offer is accepted or contract of employment is signed. The company was successful in all periods, even if the shorter time spent the better.

#### **10.1.4 Absenteeism**

Absenteeism is the percentage of lost work days due to unplanned events, such as illness or injury. The target value set by corporation is maximum 4%. This was reached in all periods; moreover the absenteeism has declining tendency. This can have two explanations. The first is that employees are generally healthy, to what contributes also the company's vitamin program during whole year (the piece of fresh fruit or vegetable every day). The second explanation is that employees tend to work even though they are ill because of the low level of sick benefit.

## 10.2 Metrics in Training Category

In spite of company provides trainings in several areas, (e.g. languages, soft skills, legally required trainings, specialized trainings, IT, etc.) it does not measure the results – what are the costs invested in training initiatives against anticipated results. This should be done in order to company be sure that it is receiving value for most of its money. Moreover, when money is tight, training budgets are amongst the first to be cut. Only by thorough, quantitative analysis can human resource or training department make the case necessary to resist these cuts.

Thus, metrics in this category should be involved in the human resource scorecard; otherwise the company will have no idea, for example what is the total net cost of the training, the cost of training day, cost per employee, etc.

For this reasons, I recommend initiation of following metrics:

### 10.2.1 **Costs per employee**

This metric refers to the organization's investment in training and developing employees and indicates the money invested during the year for training an employee.

To calculate the cost of training, first it is important to divide the costs into two categories:

- Direct costs - These costs are incurred directly as a result of a training programme, such as external design and development, consultancy fees, travel expenses, and so on.
- Indirect costs - costs that may or may not be directly associated with a training event, but which would have been incurred anyway, whether or not the training took place. Examples are salaries of in-house trainers and the costs of rooms and equipment. (14)

The total costs are then the sum of all relevant costs (direct and indirect).

The costs per employee are calculated as all the relevant costs, divided by the average number of employees. The formula can be changed to suit particular situation (e.g. total costs per course participant).

$$\text{Training Costs per Employee} = \frac{\text{All relevant costs}}{\text{Average number of employees (or FTE)}}$$

### 10.2.2 Measuring benefits

The financial benefits of training cannot be measured in terms of the amount of learning that has been achieved or the extent to which behaviour could change. The benefits come from improved performance. The major categories of benefits are:

- Labour savings - arrive where, as a result of the training, less effort is needed to achieve present levels of output (e.g. less time spent correcting mistakes, faster access to information).
- Productivity increase - arrive where, as a result of training, additional output is achieved with the same level of endeavour (higher level of skills or knowledge that leads to faster work, improved methods leading to reduction of effort required).
- Other savings – less machine breakdowns, which require lower maintenance costs, lower employee turnover resulting in less recruiting and training costs, etc.

The total benefits are the sum of all benefits achieved (14, 19).

### 10.2.3 Return on investment (ROI) for training

ROI is a tool for ensuring that training and development initiatives contribute positively to individual and organizational performance; the means of evaluating the relative value of individual training programs to the company. It is a ratio of the total costs of training relative to the total benefits gained from the training.

Provided that benefits will continue to rise some time after the training, then the period that company specifies is crucial to the ROI figure it will obtain. The period should fit in well with organisation's planning cycle – in the example of monitored company the planning period is one year.

The ROI is calculated:

$$\text{Return on Investment (ROI)} = \frac{\text{Total benefits} - \text{Total costs}}{\text{Total costs}} \times 100$$



The formula can be modified to suit the situation. The higher the ratio the better.

According to PricewaterhouseCoopers ČR and its benchmarking project HR Controlling, the scattering of this ratio is from 0 to 3.8. The results showed that companies with 200 – 600 employees are more effective and reach the value 1.7 while the median value is 1.5 in the Czech Republic, 1.2 in Europe. This refers to the cost effective management and cheaper workforce (20, 22).

For monitored company could be very interesting to benchmark this ratio with other divisions as well as other companies in the same branch of industry.

#### 10.2.4 Training costs calculation example

As an example of calculating training costs and also the comparison of two training possibilities I chose the training of feedback providing in IT/Telco Company. The values are in CZK.

Costs/Method	E-learning	Instructor-led
Number of trainees	15	15
Length of the training	6hours (0.75days)	6hours (0.75days)
Course per year	1	1
Life expectancy of material used	3 years	3years
Total internal costs	0	150
Total outside costs	0	25 000
Total costs for material:	23 350	3 700
• E-learning portal	22 000	0
• Study material	0	3 500
• User fee	1 350	0
• Instructor refreshment	0	200
Total revision and update costs	2 335	2 885
Trainee costs	11 489.36	11 489.36
• Average annual salary	240 000	240 000
• Work days per year (average)	235	235
Instructor costs	0	638.30
• Average annual salary	0	200 000
• Work days per year (average)	235	235
Total facility costs	1000	1000
<b>TOTAL COSTS</b>	<b>38 174.36</b>	<b>44 862.66</b>
Total costs over life of course	67 823.09	76 887.98
Total savings	9 064.89	-

Table 10: Training costs (source: author)

The course “Giving feedback” is focused on the training of managers and immediate superiors within the employee performance assessment which is held annually in the company. Above mentioned table shows two possibilities of training – a classic instructor-led training and via E-learning.

The course lasted 6 hours (0.75days, assuming 8hr work day) and 15 participants attended. The training material is expected to be used for 3 years.

#### E-learning:

When consider the possibility of e-learning course, the internal and outside costs are zero. The course is realized on computer and an employee can choose the time of passing. The costs for material (including establishing e-learning portal established by training company and a fee per participant CZK 90) are CZK 23 350. The estimated costs of updating/revising the materials are set as a percentage (10%) of the initial costs. The trainee costs are calculated as an average salary of employee divided by a number of average working days multiplied by the number of participants and the length of the course. In the case of e-learning there are no instructor costs and the costs for using facilities are CZK 1 000.

The total costs for using E-learning are CZK 38 174.36 (CZK 2 545 per participant). This amount could be even lower, if company establishes own e-learning portal.

#### Instructor-led training:

In the case of instructor-led training the internal costs including the time for preparation are CZK 150 and total outside costs (according to the price list of the training company) CZK 25 000. The costs for material (manuals, video presentation) and refreshment for trainer are CZK 3 700. The costs for updating and revising materials amount to CZK 2 885 and instructor costs CZK 638.30. The total costs for classic training are CZK 44 862.66 (CZK 2 991 per participant).

When compare the total costs over life of course, (calculated as the sum of revision/updating, trainee, instructor and facilities costs multiplied by 2 and adding this amount to the total costs for one year) the variant of E-learning is more advantageous in view of financial sources, however both methods have their advantages and disadvantages to be considered.

### **10.2.5 Training days per employee**

The last recommended metric that could be monitored in the category of training is the number of training days per employee. This metric refers to the quantity of trainings and its formula is following:

$$\text{Training days per employee} = \frac{\text{Number of training days}}{\text{Average number of employees (or FTE)}}$$

This is a simple indication of the amount of training being provided to all employees and it should be used in combination with training costs per employee mentioned above (16).

## 11. Conclusion

The aims of my diploma thesis was the description, calculation and use of the most used human resource metrics, their application on the example of IT/Telco Company, internal benchmarking of gained results with the corporate target values and suggestion of possible recommendation for optimization and efficiency improvement of internal human resource processes.

I divided the thesis into two main sections – theoretical and practical. The theoretical part describes above all human resource scorecard and individual human resource metrics. The practical part is then focused on human resource metrics in monitored company. Whereas the first part derives mainly from literature which list is mentioned below, the sources of information for the second part were internal information system and personal databases.

In IT/Telco Company several metrics are monitored. These are arranged in four categories – workforce stability, recruitment, workforce profile and employee relations. The composition, frequency of measurement and target values are given by the internal corporate directives valid for all worldwide divisions.

Currently achieved results from calculated metrics are generally on the very good level even if in some categories improvements could be developed.

This relates especially to the recruitment category where the values of hiring sources do not meet the corporate requirements. The agency referral is the greatest source of candidates and so needs to be restricted.

One of the proposals for optimization is to use more the internet sources, especially when searching candidates for specialized positions such as IT or management. For this kind of positions, company currently uses the specialized personnel agencies which are usually very expensive. The examples of possible working portals in particular areas are mentioned above. Other option is to increase the portion of employee referral by raising the percentage of financial bonus for candidate recommendation or setting the fixed sum.

In spite of company monitors important metrics, still there are categories that should not be neglected. The category of employee training is one of them. Thus the next

recommendation is to establish the metrics in this area, in the concrete the costs per employee, return on investment and training days per employee.

By quantitative analysis, human resource or training department can ascertain that it receives value for most of its money. Important is also the internal benchmarking of these metrics with other worldwide divisions to compare how much each of them contributes to employee training and development.

In today's business environment, companies constantly need to monitor their internal and external environment for challenges and opportunities to remain competitive and to sustain growth. Measuring the productivity and performance of every department is necessary; all the more, when take into consideration that the human resource department is fundamental in the existence and overall success of each company, because it handles the hiring of the company's major assets – its workforce.

## 12. Review of Literature

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### **13. List of Figures**

Figure 1: Balanced Scorecard Framework (Chavan, 2009, p. 4).....	13
Figure 2: Strategic Alignment of Balanced Scorecard (Kaplan, 2005, p. 23) .....	16
Figure 3: IPO Scorecard (Phillips, 2005, p.219).....	39
Figure 4: The Causal Chain Scorecard (Phillips, 2005, p. 221) .....	40

### **14. List of Tables**

Table 1: Human Resource Metrics (Phillips, 2005, p. 178) .....	20
Table 2: Metrics Monitored by IT/Telco Company.....	52
Table 3: Age Diversity-target values (source: author).....	53
Table 4: Educational Diversity (source: author).....	56
Table 5: Age Diversity (source: author) .....	58
Table 6: Hiring Sources (source: author).....	62
Table 7: Costs per Hire (source: author).....	64
Table 8: Examples of Job Portals .....	69
Table 9: Examples of Fees for Advertising .....	70
Table 10: Training costs (source: author).....	73

### **15. List of Charts**

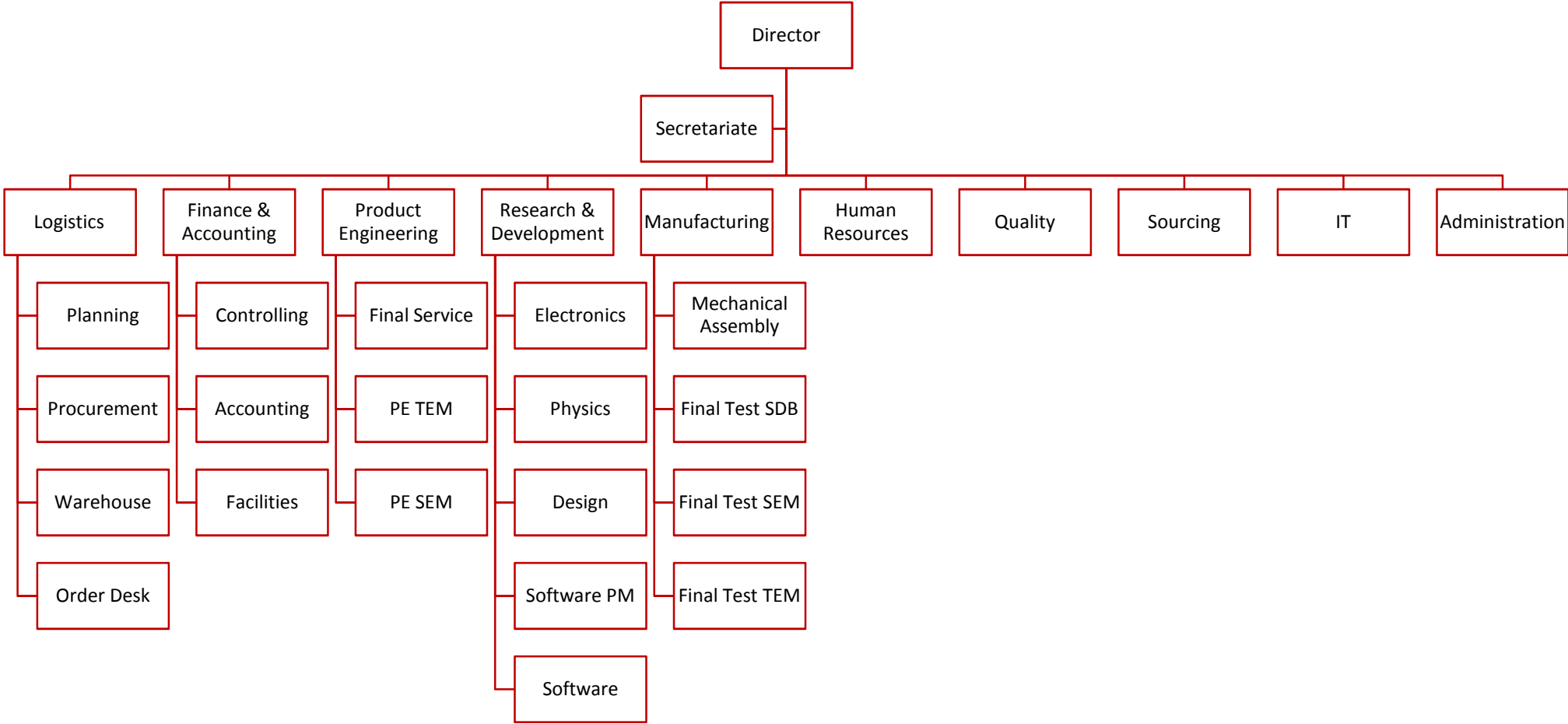
Chart 1: Turnover (source: author) .....	54
Chart 2: Headcount and FTE (source: author).....	55
Chart 3: Educational Diversity (source: author).....	56
Chart 4: Age Diversity (source: author) .....	58
Chart 5: Hiring Volume (source: author).....	60
Chart 6: Hiring Sources (source: author).....	61
Chart 7: Costs per Hire (source: author).....	63
Chart 8: Time to Fill (source: author).....	65
Chart 9: Absenteeism (source: author) .....	66

## **List of Appendixes**

- 1 Organizational Structure
- 2 List of Monitored Metrics

Appendix 1

**Organizational Structure**



**List of Monitored Metrics**

<b>Metric</b>	<b>Category</b>	<b>Internal frequency of measurement</b>	<b>Target</b>	<b>Ability to measure</b>
<b>Overall Turnover</b>	HR general	quarterly	Optimal	Yes - data available
<b>Desired Turnover</b>	HR general	quarterly	>1%	Yes - data available
<b>Undesired Turnover</b>	HR general	quarterly	< 5%	Yes - data available
<b>Absenteeism</b>	HR general	quarterly	< 4%	Yes - data available
<b>Agency referral</b>	Staffing	quarterly	< 25%	Yes - data available
<b>Employee referral</b>	Staffing	quarterly	>26%	Yes - data available
<b>Internet referral</b>	Staffing	quarterly	> 49%	Yes - data available
<b>Days to fill</b>	Staffing	quarterly	< 90	Yes - data available
<b>Cost per Hire</b>	Staffing	quarterly	Minimal	Yes - data available
<b>Educational diversity</b>	Employee structure	annually	Optimal	Yes - data available
<b>Age diversity</b>	Employee structure	annually	Optimal	Yes - data available
<b>Gender diversity</b>	Employee structure	annually	Optimal	Yes - data available
<b>Headcount</b>	Employee structure	quarterly	288	Yes - data available
<b>Full time job equivalent</b>	Employee structure	quarterly	Optimal	Yes - data available